HAMILTON *versus* MILL.

14.8.d.10

Hamilton versus Mill

A THOROUGH DISCUSSION

OF EACH CHAPTER IN

Mr. John S. Mill's Examination of Hamilton's Logic and Philosophy

BEGINNING WITH

THE LOGIC

PART II.—ON CHAPTERS XX. XXI. AND XXII.

BIBLIOTECA VITTORIO EMANUELE IN ROMA

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'Now Jack was a boy of a bold temper.'—*Popular Tales.*

'When the Justices of Cornwall (*read* Vienna) heard of this valiant action,
'they sent for Jack, and declared that he should always be called Jack the
'Giant-Killer.'—*Ibid.*

Λεγέτω μὲν οὖν περὶ αὐτοῦ, ὡς ἕκαστος γιγνώσκει, καὶ ἰατρὸς καὶ ἰδιώτης ἀφ' ὅτου εἰκὸς ἦν γενέσθαι αὐτό· . . . ἐγὼ δὲ οἷόν τε ἐγίγνετο λέξω.—THUCYD. II. 48.

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PART II.

SECTION I.

ON CHAPTER XX.—DEFINITION OF LOGIC.

THE proposition of Hamilton's objected to by Mr. Mill in this chapter, is his assertion that Logic teaches the *a priori* principles of Nature in the processes of coherent and consistent thought, to which principles it is necessary for us to conform in our reasonings, in order to think coherently and consistently;—not—be it carefully observed—not in order to ascertain this or that matter of fact, but in order to think correctly and consistently respecting whatever matters of fact we have already ascertained, or believe we have already ascertained; *i.e.*, in order to obtain valid inferences from given data, whether these data be facts or not, and whether therefore the inferences themselves be facts or not. Hamilton's words are:—'Logic is the Science of the Laws of Thought as Thought;' and to this definition Mr. Mill objects that every term in it is inaccurate:—1. Logic is *not*, he tells us, a Science. It is *also* an Art. 2. It does not treat of Thought, or thinking about things. It only treats of words, or speaking about things. It only treats of recognising things through certain marks or labels which we put upon them, *i.e.*, of recognising them by means of the words with which we express them. 3. It does not treat of Thought irrespective of the contingent matter which the Thought is about. It only treats of this contingent matter itself, or subject of our Thought, and is therefore incapable of being symbolically expressed. It treats only of what is ascertainable as fact, not of what is ascertainable *a priori*. 4. It does not treat of Nature's Laws at all. It only treats of human laws,—of the precepts or rules which enable us to conform to Nature's Laws.

always regarded as the name both of a Science and an Art. He also states that in his definition of Logic here, he, for these reasons, uses the term 'Science' only in its general and untechnical sense, as *Scientia*, a branch of knowledge.

To set this matter in a clearer light, I may observe that Ethics and Astronomy are Sciences; we never speak of them as Arts; and that Watchmaking and Grammar are Arts; we never speak of these as Sciences. The question is, Why is this the case? What constitutes the difference between these things? Again: With regard to the term 'Logic,' this name is applied to two distinct subjects. One is a branch of Metaphysics. The other is a body of rules for human conduct. One treats of the *a priori* principles of intellectual action. The other explains to us only how we can speak and think coherently and without self-contradiction. A person may be well versed in either of these departments of information without having ever heard of the other. In the loose popular sense commonly employed, the body of rules would be called an Art and the natural Laws would be called a Science. All that was ever in dispute was,—not as to whether the term 'Logic' was applied to both, for it always was applied to both, but as to why and whether the system of precepts was not a Science as well as the metaphysical distinctions, and as to why and whether the metaphysical distinctions were not an Art as well as the system of precepts; and this is the question still when we ask, Is Logic a Science or an Art? To say that it is both is also saying, at the same time, that it is neither and is at best only a silly way of saying that the one subject has both a Science and an Art belonging to it,—that it is a branch of knowledge—not which *is* both, but which *has* both. The question is not, however, nor has ever been, whether Logic has a practical portion as well as a theoretical portion. The only question that has ever existed is this,—Is theoretical Logic not an Art? Is practical Logic not a Science? For, as we have seen, the fact of involving practice or having a practical side, as in Ethics and Astronomy, does not make a thing an Art, nor does the fact of a thing's involving theories or having a scientific side, as in the case of Grammar or Watchmaking, constitute a thing a Science. Can we truly say of Logic, as of Ethics, that it is not an Art but a Science?—or, as of Grammar, that it is not a Science but an Art?

Let us now compare with these facts what Hamilton says, and what Mr. Mill says, about Logic. Hamilton remarks that it was long discussed whether Logic was a Science or an Art, or both, or neither; but that, as the distinction between these two general conceptions—an Art and Science,—is not very clear—is not clear enough nor marked enough to render the terms of any use in a definition, every purpose will be here answered by speaking of Logic only as a Branch of Knowledge;—that we may thus speak of it as a Science in one of the significations of that word 'Science;' that we may speak of it as a Science, meaning by that term only 'a department of knowledge,' and not meaning thereby anything contradistinguished from Art; for that it is neither important nor possible to speak of Logic as a Science nor as an Art in the sense in which these terms are exclusive of one another;—not important, because Logic can be sufficiently distinguished from other branches of knowledge by stating the subject of it;—not possible, because there is nothing yet determined as to the difference between Art and Science, except the vague general fact that 'Art' refers chiefly to the practice, and 'Science' chiefly to the theory, of any one given branch of knowledge. 'I am 'well aware (says Hamilton) that it would be no easy matter to 'give a general definition of Science as contradistinguished from 'Art, and of Art as contradistinguished from Science; but if the 'words themselves cannot validly be discriminated, it would be 'absurd to attempt to discriminate anything by them. When 'I therefore define Logic by the genus *Science*, I do not attempt 'to give it more than the general denomination of a branch of 'knowledge.'—(*Lectures*, iii. p. 12.) We see, then, that Hamilton here uses 'Science' in its general and untechnical sense to denote a branch of knowledge, without seeking to determine in what sense this branch of knowledge is exclusively a Science, or in what sense it is exclusively an Art, merely observing that in the sense commonly assigned to these terms, there never was any contest as to whether Logic was an Art or a Science, since, in that popular sense, it was always recognised as both (*ibid.*) We see, therefore, that Hamilton does not say that Logic is not an Art when he only says that it is a Science. We see that he does not even call it a Science in Mr. Mill's correlative sense. We see that he only speaks of it as a branch of knowledge, or a Science in the general sense in which this term includes Art. We see that Hamilton has elaborately explained all this.

Mr. Mill, ignoring the distinction, thus carefully pointed out, in the significations of the word 'Science,' affects to see but the correlative signification, and replies:—Since every branch of knowledge has both a practical side and a scientific side, Logic is a Science as well as an Art, and an Art as well as a Science; and this being the case, it is inaccurate to speak of Logic as a Science only, which Sir W. Hamilton has done. It is both a Science and an Art (p. 376); and being such, must be so spoken of and so regarded. When every man in a community is both a father and a son, it is of importance, every time we speak of a member of this community as being the one, to speak of him likewise, at the same time, as being the other also. It is not correct to say that such a man is a son, or that such a man is a father. It is absolutely necessary to say that he is both a father and a son, or we shall not define him,—we shall not distinguish him from other members of the community. Was it from Sir W. Hamilton we should have expected to hear that a distinction is of no value (for a definition) because it does not mark a difference between two things, but a difference in the point of view in which we may regard the same thing (p. 377)? Was it from Sir W. Hamilton we should have expected to hear that, in order to distinguish a father from other fathers, it was useless to say that he was a father, and almost equally useless to say he was a son? Any such remark, continues Mr. Mill, is extremely superficial in so profound a thinker, and a clear proof that although not in the habit of looking at the surface of things, he nevertheless always did so, in fact could not, in the case of most things, do otherwise, etc. etc. (*ibid.*) So expostulates Mr. Mill. The answer to all this is that Hamilton tells us he does not here use 'Science' in its correlative sense,—that he merely uses it as a synonyme for 'branch of knowledge,'—that the reason he does so, is because we have nothing which is sufficiently definite, determined on, as the meanings of these words, Art and Science, and that as to the sense of them, adopted by Mr. Mill as their only sense (viz., that all is an Art that can in any respect be called practical, and that all is a Science that can in any respect be called theoretical), no one ever denied that Logic was both an Art and a Science, in that sense. Thus Hamilton, I repeat, does not say that Logic is not an Art, as Mr. Mill affects to think he does. On the contrary, he says it is one; and that too in Mr. Mill's sense; and Hamilton does not even say it is a Science, as Mr. Mill objects to his doing. Hamilton says it is no use to call it one,—that to do so is to undefine and to confuse. There is no reader who cannot upon this point judge whether Mr. Mill is serious or in jest,—whether he would or would not have chosen to represent himself seriously as the obtuse interpreter, not to say the false reporter, whose part he is here playing.

But next, as a second ground why Hamilton ought to have called Logic an Art as well as a Science, Mr. Mill enters upon some very curious reasoning (p. 377), to the effect that this mode of distinguishing Logic from other branches of knowledge (viz., by calling it an Art as well as a Science) is of the greater moment in the case of Logic, because Logic is, like Navigation, more properly an Art than a Science, depending, as he thinks Logic does, upon some knowledge of all the Physical Sciences, just as Navigation does, upon some knowledge of almost all; which fact he regards as the surest criterion of an Art; whereas to be a Science, according to him, a branch of knowledge must be original, and depend upon no other branch. Thus Logic and Navigation are both of them Arts, but not so much Sciences, because each of them consists of, and is founded upon, a whole system of Sciences. Logic cannot be learned without aid from all the Physical Sciences, any more than Navigation can without aid from almost all of them! Logic is therefore an Art!

Now, to say nothing of the utter nonsense involved in the criterion of an Art thus presented to us, there is nothing whatever of the alleged analogy between Logic and Navigation. The practical rules of Navigation are founded upon, and derived from, principles in several of the Physical Sciences. The practical rules of Logic are not one of them founded upon or derived from principles in any one of the Physical Sciences. Mr. Mill's confusion is here intense. No Logician requires to be acquainted with a single Physical Science in order to be perfect master of his Art. This is a point on which all students and all Professors of Logic can, I suspect, enlighten Mr. Mill, and which the latter himself, *more suo*, fully acknowledges, when he says that 'It (Logic) can be taught earlier (than Induction) since it does not presuppose a practical acquaintance with the processes of scientific investigation' (p. 404). Nor does even the scientific knowledge upon which the practical rules of Logic are founded, require us to be acquainted with any other Science than Metaphysics, nor, of Metaphysics, with any more than that *a priori* portion only which exhibits these rules in their first principles, and which is itself called

Logic, quite as much as the mere rules, thence derived, are called so by those who know nothing more of Logic than those rules. And yet, according to Mr. Mill, Logic is to be called an Art as well as a Science, not only because the term, so used, serves to distinguish it from other branches of knowledge, all of which have their practical side!—but also because Logic is not only an exact Science itself, but an Encyclopaedia of those Sciences which are not exact! Are we to believe that Mr. John Mill is in earnest in either of these remarks? Would he have committed himself to such 'a bad quality of Metaphysics' as this, were it not that he addresses intellects which, for some unexplained reason, he considers must be dwarfed ones? Would he have done it otherwise than as a hoax?

But Mr. Mill's reply does not stop here. He brings in another Giant and contrives a very ingenious optical illusion, in which the two Giants are seen to struggle with one another when in reality they are standing very amicably side by side, both apparently much amused by the antics of the little Champion. Mr. Mill tells us that Hamilton treats Whately's remark upon this subject with severity and contempt (pp. 373-378).

It would be sufficient answer to this to say that, on the contrary, the frank and generous zeal, above all clique, with which Hamilton defends what he believes to be the truth, against the opposition of earnest and enlightened men, could not possibly be exhibited in a more attractive light than we find it in his comments upon Whately. Everything that was graceful, everything that was true, everything that one enlightened and noble mind could look for in the criticism of another, Whately was himself able to appreciate upon this occasion in his great Critic. But this answer must not suffice. Let us go over the whole matter.

As to the severity, it is given in Hamilton's own words by Mr. Mill (p. 373-4), and consists in Hamilton's expressing *complete* dissent from Whately upon three points:—(1.) When Whately says that a Science which has a practical side is an Art, and that an Art which has a theoretical side is a Science, Hamilton says that this is not so,—that this having a practical side or a theoretical side does not constitute the difference between a Science and an Art, and he assigns reasons for objecting to this mode of distinguishing these terms. (2.) When Whately says that most writers considered Logic to be an Art, not a Science, Hamilton says

Whately was wrong here too,—wrong whether, by 'Art,' he meant that which *is* the practical side, or that which *has* a practical side. For there never was any one writer who considered that Logic had nothing theoretical in it; and a great majority of writers at all times considered it to have nothing in it but what was theoretical. (*Discussions*, p. 129, etc.; *Lectures*, iii. 10, etc.) In other words:—The whole question is, as to whether 'Logic' may be considered a generic term comprehending under it two species, a Science and an Art, and as to whether it is thus applicable to both; or as to whether it is to be applied to the Art alone or to the Science alone. Whately says it is a generic term applying to both, but that writers generally made the mistake of supposing that it applied to the Art alone; whereas Hamilton says that no writer ever made the mistake of thinking that it was not both when they thought of it as an Art at all, but that by far the greatest number thought of it as a Science only, and did not understand it to apply to an Art, either as part of, or as the whole of its import. (3.) Hamilton says that, in Whately's sense, the words Science and Art are of no use in defining a branch of knowledge, but would rather undefine it and confuse it, there being no branch of knowledge, or scarcely any, which is not, in that sense, both. These are the three points of difference here between Hamilton and Whately. The severity of the dissent is not very obvious, unless it be severe upon a writer not to follow him into what we believe to be his errors, or unless it be severe upon him to state with the utmost honesty and distinctness that we consider him clearly and utterly wrong. Is this however, after all, even in its strongest form, to be severe?

I recapitulate these matters thus:—Mr. Mill tells us that Hamilton defines Logic to be a Science only, not an Art, and that he condemns Whately for saying that it is both. This statement of Mr. Mill's can be seen by everybody to be entirely inconsistent with the fact, and is therefore obviously a mere jest. Hamilton expressly explains that, in Whately's sense of the terms Art and Science, Logic is as much the one as it is the other, and that it is a sheer fiction upon the part of any one to say that he (Hamilton) denies this; only observing, *first*, that since, in that sense, every Science is an Art, and every Art a Science, these words, so employed, are useless in the definition of either a Science or an Art; and, *secondly*, that if this interpretation of the terms were adopted, then Theology, Moral Philosophy, Astronomy, Chemistry, Geology, and other practical Sciences would be Arts (as well as Sciences), which we see at once that they are not. This, which is the whole of Hamilton's severity, and not exactly what we call severe, our critic repels by insisting that even in the vulgarest apprehension (perhaps chiefly in the vulgarest) Theology, Astronomy, Moral Philosophy, Geology, etc., are all of them Arts, because all of them Practical Sciences, and because there is no difference whatever, according to Mr. Mill, between a Practical Science and an Art (pp. 374, 376). At this point Mr. Mill affects the utmost indignation; and after reiterating his conviction that the difference between Science and Art is the same as that between knowledge theoretical (as Geometry) and knowledge practical (as Geology) the Giantkiller, with his inimitable little cap of knowledge on his head, his arms akimbo, his chin well thrown up, and his eyes glaring upon his upper galleries, says sternly and emphatically, But if the difference is not this, Mr. Giant, we are entitled to ask, what then is it? If Whately, the Giant with the mitre on, has placed the distinction where it is not, does his rather peremptory critic and censor, Sir W. Hamilton, tell us where it is? (p. 374.) Playful, peremptory, superficial little Jack!

Then Hamilton's contempt for Whately is still less obvious than his severity. Hamilton, when republishing, in his *Discussions*, this very Article on Logic from the *Edinburgh Review*, speaks of the pleasure with which he heard of Whately's elevation to an Archiepiscopal See, and speaks from the first of Whately's Logic as standing pre-eminent among all other English works upon that subject, 'the highest in point of originality and learning.' Also, when speaking of criticising Whately in this Article, Hamilton says:—'In doing this nothing could be farther from our intention 'than any derogation from the merit of that eminent individual, 'whom, even when we differ most from his opinions, we respect 'both as a very shrewd and (what is a rarer phenomenon in Oxford) 'a very independent thinker. . . . The interest of truth is above all 'personal considerations; and, as Dr. Whately has well observed, 'errors are the more carefully to be pointed out, in proportion to 'the authority by which they are sanctioned. No mercy, says 'Lessing, to a distinguished author. This however is not our 'motto; and if,' adds Hamilton in words which must come singularly home to Mr. Mill, 'if our scrutiny be "severe," we are conscious that it cannot justly be attributed to determined opposition'

(*Discussions*, p. 128). Now, what are we to think of such contempt as this, and of such severity as this? and what of Mr. Mill, who is reduced to such statements as these in order to make it appear that Hamilton has the wrong upon his side, in order illusively to overwhelm one of his Giants by placing him in a fictitious death-struggle with another of them? We see, at all events, that Hamilton does not say that Logic is not an Art, nor even, in Mr. Mill's sense, that it *is* a Science; and we see also that it is absurd to suppose Mr. Mill serious when he describes him as having done so.

2. *Logic does not treat of Thought. It only treats of words. It only treats of our recognising things through certain marks* (viz., *words*) *which we put upon them.*

But is not all recognition Thought, whatever it be the recognition of? Logic, therefore, even upon Mr. Mill's showing, treats of Thought as Hamilton says it does; and we might pass on; but this would be to lose much of Mr. Mill's curious criticism.

Thought, according to Hamilton, is Judgment; and Mr. Mill assents to this (p. 380). But Mr. Mill admits also that Logic treats of Judgment. Logic therefore treats of Thought. Here, also, we might pass on to the next term of the Definition. But it is worth while to look a little further into what Mr. Mill says.

In Thought things are recognised, according to Hamilton, and all of us, through marks which we observe in them, as parts of their nature. No such thing, says Mr. Mill. Things are recognised by means of certain marks which are not in them by nature, but which we ourselves put upon them, these latter artificial marks being Words. Mr. Mill affects to call this Thought, and to deny that Logic treats at all of what we ordinarily call Thought.

The marks which things have as parts of their nature—which the Author of Nature has, as it were, put upon them—are their qualities or properties, their attributes, their predicables,—whatever is true of them,—whatever points they agree in, or disagree in, with things previously known. *Through* all such marks we know them. *In* all classes of things so marked we find them. *Under* all conceptions so defined we include them. This is what is called Thought, or Thinking.

The artificial marks to which Mr. Mill alludes are Words, Words only; with which words, according to him, we label the things and mark them; but how we effect this, he does not tell us. This constitutes a serious blank in Mr. Mill's 'System' of

Words. Nor anywhere does he attempt to divest the statement of its comic character except in this place, where he tries to give it respectability by telling us he learnt it from Hamilton, or at least that this is all he can gather from what Hamilton teaches (pp. 380, 381). He is here, however, merely 'deceived' by an expression which could have deceived nobody else. We say to mark a house or to mark a man in two senses. We either mean to take notice of something in the objects by which we can know them again; or we mean, to take a bit of chalk and mark them; *i.e.*, to employ either a natural or an artificial mark. Hamilton here uses the term in the first of these senses, and so do all Logicians. Mr. Mill supposes him and them to use it in the second, and Mr. Mill himself, accordingly, so uses it. Hamilton says that when we observe in an object, which is not otherwise known, an attribute familiar to us as being also in other known things, this attribute thus becomes to us a mark whereby we know that the object of which it is a part exists under the genus or class or general conception distinguished by this attribute; and Hamilton says that the observing this part of the object's nature may be described in other words as 'the marking an object by an attribute or attributes, previously known as common to sundry objects, and to which we have accordingly given a general name.' These are Hamilton's words, which Mr. Mill supposes to mean, and distinctly to say, that we get to know what an object is '*by marking it with a name* derived from an attribute' (pp. 380, 381). When we observe that there is an object present, we get to see what it is, according to Mr. Mill, by an artificial mark which we find upon it, or—stranger still—which we then and there place upon it, instead of by one of its own natural marks!—by a word, instead of by some quality of the object!—and this operation, not Thought, is the subject of Logic!—and we are to suppose that Mr. Mill's discernment did not enable him to detect here his own equivocation! 'Settle that among yourselves, gentlemen,' is all that can be said to these critics and admirers of Mr. Mill.

I now proceed to draw the reader's attention to the mode in which Logicians use the 'small words,' 'In,' 'Through,' and 'Under,' to which Mr. Mill has so much antipathy. To perceive anything by sense is one thing. To perceive what the thing is, which we so perceive, *i.e.*, what it is like, is another thing. This latter is the result of thinking or comparing, and thinking or comparing is the subject of Logic. Thought does not consist in our experiencing a sensation or a group of such, but in comparing this sensation or group with others already known, and recognising its similarity to them, as possessing similar attributes, observing it to come thereby under the same description or general notion, although there be other attributes or logical parts in it which, either singly or combined, distinguish it from all others, *i.e.*, individualize it. This is to think about a thing. It is to consider its relations to other things,—to think about it through, or in, or under these relations; and this is what Mr. Mill denies to be the subject of Logic, or to be that at all which we ever do. Let us rather say he only assumes the appearance of denying this. In other words; there is nothing more common than to say, I see something, but I do not see what it is; I do not know what to think of it,—what to make of it. This is what we say when we discern no characteristics in an object, *through* which we can know that object,—when we do not see *under* what class of known things or *in* what class of them, we can place it. This discerning and seeking to discern what is true of, or what is, in logical language, part of, anything, is what we call Thought, and what Logic treats of, but what Mr. Mill says we never find taking place, or Logic treating of.

Mr. Mill's opposition to Hamilton's statement, that Logic treats of Thought, beginning at p. 378, is carried on in the ordinary vague snarling and growling, one scarcely knows at what, and in the ordinary long quotations from the *Lectures*, given not, the reader will believe me, to convince us how deeply and justly and clearly Hamilton thought out all this subject (although the quotations cannot fail to have this effect with all who understand the subject), but, on the contrary, to make it appear to those unacquainted with the question at issue, that Hamilton was *all that much* wrong. This opposition to the term Thought in Hamilton's definition is also carried on by an awkward effort to get the term itself transferred from our mental action respecting the relations of things to our mental action respecting the relations of the words which we apply to things; as if we could not think of things unless we knew their names! But it is especially where Mr. Mill enters upon his little crusade against the three 'small words,' *In*, *Through*, and *Under*, as we employ them in our definitions of thinking, that he throws most life into this simulation of dissent from Hamilton. This is a matter well worth attending to, in order to appreciate fully Mr. Mill's exertions.

Abandoning for the moment his absurd theory about marking things with our words instead of with their own attributes, Logic, he tells us (pp. 380, 381), does not treat of our finding things to fall *under* certain descriptions, or to be included *in* certain descriptions, but of our *referring* them *to* certain descriptions, or finding them to *possess* certain attributes! Nor does Logic treat of our getting to know things *through* certain attributes which we discern in them. It simply points out to us that we know them *because* they have certain attributes! Here are distinctions which no one could be expected to credit who had not Mr. Mill's book to refer to.

He admits that he has great difficulty in understanding the technical language of Logic, and that it only tends to confuse his ideas, and those, he is sure, of inexperienced young men especially, (Mr. Mill is very anxious about the young and inexperienced) who must find it, he thinks, quite as objectionable and unintelligible as he does. The objectionable and unintelligible portion of this language now in question consists of the three 'small words,' *Under*, *In*, and *Through*. Mr. Mill is here didactic. He tells us that when we say we know a thing to be so and so, *through* the characteristics we discern in it, instead of saying that we know it *by* these or *by means of* these, or instead of saying that we refer it *to* the class distinguished by these characteristics, we are not, in such cases, speaking good English, nor even a good 'quality of Metaphysics,' it being much better English and much better sense and much better philosophy to say that we know the object to be so and so, *because* we refer it to a class which is distinguished by these characteristics! And again; he gives us to understand that when we speak of a plant as coming *under*, or as being under, or as being placed under, such and such a species in the Linnæan system, or as being *in* a species at all, this is all bad Logic, and inaccurate, unphilosophical, peculiarly unprecise, confusing, misleading, etc. etc., and that, instead of it, we ought to speak of *referring* the plant *to* a species, or ought to say that it *has* certain attributes!

If there are any who think that Mr. Mill must have written his book in seriousness, let them attend carefully to what he says about these three prepositions, *In*, *Through*, and *Under*, at pages 380 and 381. Like a true Transcendental Metaphysician as he is, even in his jests, and as he will later be more clearly seen to be in all things, he seeks obscurity where there is none, and assures us

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that he does not see the precise import of the preposition 'Under,' when we think of anything as *under* a certain class or conception (concept), nor the precise import of 'In,' when we think of the object as being included *in* a certain class or conception of objects, nor the precise acceptation of 'Through,' when we declare the object as known *through* our knowledge (notion) of this or that one of its attributes. He holds that 'to refer a thing to' a certain class or conception of things is the only way in which the English language allows us to express ourselves upon this point. But in this he is completely mistaken, as he seems soon afterwards to become conscious. Our language is much more copious than he is here disposed to imagine. To think of or know a thing in, through, or under a general conception or class, is not only a perfectly normal expression, but to a man even slightly versed in Logic, very far from an obscure one; nay, as to this obscurity and difficulty of these expressions, there are few children now-a-days, collecting ferns and other plants, who will not understand what is meant by the words, *In, Through,* and *Under,* thus employed; and, to anticipate by a few lines one of our critic's formularies, if there is a recommendation, I would inculcate on every one who commences the study of either Metaphysics or Logic, as Mr. Mill seems to be now doing, it is to be always sure what he means by his big words, and then he will have less difficulty in seeing the force and import of the small ones. What is allowable and common in language will then not appear to him so unprecise and so obscure.

But although I endeavour to conciliate Mr. Mill's patrons by writing as if he were serious and ought to be reprimanded, there can be no broader farce, however poor it may be, than that with which he here presents us upon the words *In, Through,* and *Under.* He heaps every remark upon it that can intensify it. If we wish to see what Hamilton means by an explanation, we must, says Mr. Mill, adopt a different rule from that which we should in the case of any other writer. We must take care to understand very distinctly—we must bear well in mind—what it is he is speaking about; a precaution so unnecessary in the case of other writers. 'To find the meaning of the explanation (in Sir W. Hamilton's case) we have to resort to the thing explained' (p. 380). Is this not broad enough? But what are we to think of Mr. Mill's remark respecting our 'small words,' as Hamilton and all of us use them, —respecting our knowing a thing *through* our knowledge (notion) of its qualities, and recognising it *under* the class so qualified instead of our knowing that it *has* these qualities and *referring* it *to* a class? Under what category are we to place such a remark as the following from a novice in a first essay on Metaphysics? 'If there is a recommendation I would inculcate on every one who 'commences the study of Metaphysics, it is to be always sure what 'he means by his particles. A large portion of all that perplexes 'and confuses metaphysical thought comes from a vague use of 'those small words' (p. 381). Is this then not farce? Is this (even addressed, as it seems to be, to the metaphysical students of our universities) not something like what we call instructing one's grandmother to get at the contents of an egg? and may we not, in sober earnest, and with great truth, again imitate the remark for Mr. Mill's benefit as follows:—If there is a recommendation that I would inculcate on Mr. Mill, or any one else who commences the study of Metaphysics, it is to make it a rule with himself from the very first never to write a single word of nonsense. A large portion of all that perplexes and confuses metaphysical thought comes from a vague notion that those who write on metaphysics, or even criticise a metaphysical writer, may write any amount of nonsense that occurs to them, without being laughed at.

Mr. Mill has two further remarks of the same comic order as the above. If we see an object before us which appears to us to be a man, and find that a sword passes freely through it, at all points, without death ensuing, Hamilton and all of us say, we recognise that it is not a man, *through* this characteristic of its not being mortal, or through our knowledge (the notion) of this characteristic, and that, on the other hand, if the object is killed in the process, we recognise the object as a man *through* this fact or knowledge (this notion)—through this attribute,—of its having been liable to die, in addition to the rest of what we discern in it, that makes it like a man. 'Is this,' asks our merry critic, 'is this to know the notion man *through* the notion mortal?' Well, I believe it is, Mr. Mill; although I doubt much whether 'having a notion of a notion, or, as you put it, 'knowing a notion,' has much sense in it. It is upon this same principle that (as alluded to in a former page, Part I. p. 69), if ever we should find an object with the ordinary characteristics of a man, but having an hundred legs, we should recognise through this attribute that the object was not a man; and that, if this object, instead of being a centipede, was a biped, we should adopt the notion that it was a man *through*, or in consequence of, our notion or knowledge that it was a biped. We should know it to be a man *through* its being a biped; or, as Mr. Mill merrily expresses it, we should know the notion Man *through* the notion biped. Are we to consider this Pet of the Press serious when he denies this?

Then he makes a further sportive struggle to get rid of *In*, *Through*, and *Under*, in our definition of what Logic treats of. Instead of saying that, when we think, we include an unknown object *under* a general conception, already familiar to us, or that we then know this otherwise unknown object *through* such and such known characteristics, Mr. Mill regards it as much clearer, less tortuous, and less misleading to express ourselves as follows:—'TO THINK OF AN 'OBJECT *is to mark it by an attribute or set of attributes which has* '*received a name, or* (*what is much more essential*) *which gives a* '*name to the object,—gives to the object the concrete name to which* '*its own abstract name, if it has an abstract name, corresponds; but* '*it is not indispensable that the attribute should have received a name* '*provided it gives one to the object possessing it; as an animal is* '*called a bull in sign of its possessing certain attributes, but there* '*does not exist an abstract word, bullness*' (pp. 380, 381). This, then, Mr. Mill tells us, is to think. But here again we appear to be at one of those 'modes of expression' so common in Mr. Mill's book, which seem to have attempted (p. 341) to be more philosophical than they knew how to manage, and which obtrude themselves everywhere as specimens of clear and unmisleading brevity. Are we here also to consider Mr. Mill in earnest? The reader will find, at p. 380, but, as usual, carefully covered up, Mr. Mill's own *veto* upon any such interpretation of what he has written upon this portion of Hamilton's definition. After quoting a whole page of Hamilton's 'In, Through, and Under' to define Thought, Mr. Mill nevertheless writes there, respecting all of it, 'This is intelligible and unobjectionable.' We then hear something, as at page 341, about there being 'nothing amiss but a mode of expression,' and he passes on to his next objection.

3. *Logic does not treat of Thought irrespective of the matter which we think about*, says Mr. Mill. *It only treats of the matter or subject of our Thought. It only treats of what is ascertainable as fact, not of what is ascertainable* a priori.

The proposition here denied, Mr. Mill regards, and justly enough, as one of the cardinal points of Logic,—therefore, of Hamilton's Logic, and therefore as one of those that required to be attacked with most show of triumph. The attack, however, is here so undisguisedly a sham, that it need not detain us. For this reason also it ought to be attentively read by every one who desires to see with least trouble the real drift of Mr. Mill's book. It only occupies four pages (from 381 to 385).

Hamilton's explanation of what he and all Logicians mean by 'Thought as Thought,' *i.e.*, of the principles upon which we think, irrespective of the subject we think about, is admirably clear, and what any school-boy or school-girl can be made to comprehend. It is contained in the proverbial remark, that a man may reason accurately enough from false premisses. Yet Mr. Mill thinks Hamilton's explanations about the meaning of this expression 'insufficient,' and wishes us to interpret the term 'insufficient' in this place confusedly, as if its import were that Hamilton's proposition—the cardinal point of his Logic—is inaccurate. Finding it impossible to gainsay what Hamilton states, Mr. Mill tries to make it appear that he cannot understand it, and that no one can understand it, but all the time intending us to suppose that this is gainsaying it. We have Jack here in the Coat of Darkness—the Ignoratio Elenchi —again. He argues the unintelligibleness of what Hamilton says, instead of the real point at issue,—its inaccuracy; and does this in full confidence that his 'intelligent' audience will not discern the trick.

Let us now attend to what is unintelligible in Hamilton's proposition, that as Grammar teaches us how to speak, *i.e.*, teaches us the Form of Speech,—irrespective of what we speak about, Logic teaches us how to think, *i.e.*, teaches us the Form of Thought,— irrespective of what we think about. Mr. Mill apprehends this to be unprecise. He does not know, he tells us (pp. 381, 382), what on earth Hamilton can mean by the Matter of our Thought,—the subject we are thinking of. Our Transcendentalist is, as is usual with Transcendentalists, posed by the extreme clearness and simplicity of the explanation. But he wriggles on. It is, we are told, a pity Hamilton used such an obscure expression as 'the matter of our thoughts.' A pity indeed: But surely we may regard it as a still greater pity,—as perhaps more properly the very identical pity and evil Mr. Mill speaks of,—that those to whom the vocabulary of a science is obscure and unintelligible should nevertheless pretend to understand that science. If there is a recommendation I would inculcate on every one who commences the study of Metaphysics, it is to be always sure that he understands its technical language, —both the big words and the little words. A large portion of all that perplexes and confuses Metaphysical thought comes from an ignorance of its technical terms. But, ah, if Hamilton had only explained to us what we mean when we ask one another, 'What are you thinking about?' or, 'Pray, what is the subject-matter of your cerebrations just now?'—if Hamilton had only done this, we should then, Mr. Mill thinks, have been able to see better what was wrong in Hamilton's Definition of Logic, and what the interests of Morals and Religion obliged us to condemn in it.

Mr. Mill, however, was discerning enough to see that such Transcendental trash as this would go a very short way in keeping up the requisite amount of mist and mystification. Two other giants—indeed three others, are therefore put forward to divert attention from the facts. We are to suppose them all fighting against Hamilton, even when they seem not to be doing so. One of these is Whately, and to make him look bigger, he has his mitre on. When Archbishop Whately speaks about 'the matter of our thought,' we know what *he* means. But, when Hamilton speaks of it,—when Hamilton says, What are you thinking about? What is the subject-matter of your thoughts, or the object-matter of them?—Hamilton, we are assured, means something much more on these occasions than Whately does; but what this something is which he means more than Whately, there is not, Mr. Mill assures us, anything in Hamilton's writings enabling us to judge; anything even enabling us to judge whether it is more or less than Whately means (p. 382). But what of that? With Hamilton that simplest of questions, 'What are you thinking about?'—had a very mischievous tendency which it never has when other people ask it,—especially an Archbishop. Even the Archbishop, however, is not allowed to tell us what this tendency or import is. He does not, in fact, seem to know.

Then, again, as to the other, the cardinal point, our reasoning may be correct, says Hamilton, although our premisses are incorrect. This, so obvious to everybody else, Mr. Mill affects to look upon as to him something 'staggering,'—something, at least, unintelligible. How can the form of our thought be correct, he asks of Hamilton, if the matter is incorrect? When Whately, indeed, says this about the form of our thought, and about the matter of it, Mr. Mill can understand Whately (p. 382), but when Hamilton says this, how is it possible that any one should understand? Mr. Mill at least cannot,—and this is all the assistance which Jack is here supposed to derive from this Giant in overthrowing Hamilton, viz., that when both the Giants use the same words, Jack understands the one but not the other. Jack's understanding is one-sided.

The second Giant here introduced not only agrees also entirely with Hamilton, but, unlike the last, is admitted by Mr. Mill to do so. Mr. Mansel illustrates the meaning of the terms 'Form' and 'Matter,' as here employed, by their common acceptation, when we speak of the *shape* and *substance* of a block of marble. Mr. Mill evidently flatters himself, for a moment, that this illustration of Mr. Mansel's furnishes him with materials for a complete confusion; but seems to become immediately conscious that it does not; for after quoting it, he makes no use whatever of it, and merely hopes that his readers will. A few points, however, require to be adverted to.

The block of marble receives a shape from the sculptor. Let me ask, says Mr. Mill with that playful arrogance so pleasing to his upper galleries, had it no shape at all when it came out of the quarry? (p. 383.) O dear, yes, Mr. Mill. It had the shape given to it by the quarrymen and their implements. We expect him to retort:—Had it no shape *before* it came out of the quarry,—before an implement touched it? but, strange to say, he omits this question.

Admitting fully that it is only to introduce a third Giant for effect, and that the introduction has nothing whatever to do with the question, Mr. Mill observes (p. 383) that Kant considers us to create the qualities of a stone when we look at it, or at least some of them. This blunder of Mr. Mill's may be taken as a sample of what I am disposed to look upon as his genuine blunders. It is, no doubt, merely derived second-hand from books in which it exists. But not in Kant's books. Kant no more supposed us to give the birds and flowers their sizes than their colours; and no one ever describes him as saying that we give their colours to the flowers and to the birds.

The reader now sees clearly, in spite of all Mr. Mill has said, that whatever we think about is the matter of our thoughts, and that the way in which we think about it—the mind's action with reference to it—is the form of them. There is nothing confused or confusing in all this. It is clear also that when we think about the way in which we, on any past occasion, thought of anything, the Form of our thought upon that past occasion becomes the Matter of our present thought, just as the present Form, or present thought about that past Form, may become the subject or Matter of to-morrow's thought, *i.e.* of to-morrow's Form. Thus the Form in the case of one Thought can become the Matter in the case of another. Is there any one to whom this appears a difficulty or perplexity or unintelligible? Are we to suppose it such to Mr. Mill? Although he laughs at it here as one box inside another, and growls at it (p. 396) as confounding in hopeless confusion all Matter and all Form as far as these terms apply to thinking, are we to suppose him not to know how the Matter of our thought is different from the Form of it, and that there is nothing whatever unintelligible here or even obscure in the use of these expressions?

Mr. Mill is also well aware (p. 384) that the premisses contain the whole Matter of the Syllogism, and the conclusion its whole Form, and that neither Hamilton nor any other Logician ever denied this,—ever declined, whatever else they regarded as Form or whatever else as Matter, to go with any writer, be he who he may, the whole length of this statement. I cannot credit Mr. Mill with the ignorance he here pretends to. And when he says (*ibid.*) that Hamilton, after Krug, 'considers the propositions and terms as 'the matter of the syllogism, and the mode in which they are con'nected as its form,' Mr. Mill also knows well that Hamilton does not do so, although he cannot know as much respecting Krug, being wholly unacquainted with Krug's writings. Mr. Mill knows well that Hamilton, without Krug as well as after Krug, says distinctly and repeatedly the reverse, viz., that it is things and facts, not the terms and phrases which express them, that are the Matter of the Thought, and that it is the mental action with regard to these things and facts, and not the grammatical form of these terms and phrases, that is the Form of the Thought.

But whatever amount of ignorance his Patrons of the Press may choose to impute to Mr. Mill upon these points, we see that he does not deny the great Cardinal point of all Logic, and of Hamilton's Logic, that is here in question. When he says (p. 373), 'We are in a position to examine it,' this is, we see, only a sham. He does not deny anything. Some will say that it is not even a sham, and that if the words 'to examine it' mean anything at all in this place, they only mean, 'to see how true and how clear this Cardinal point is.' But although Mr. Mill does not deny Hamilton's Cardinal Point, that Logic treats of the Form of Thought only, not of its Matter, he must nevertheless seem to do so; and for this purpose he declares it unintelligible, hoping, as I have said, that his admirers will confound what is false with what is unintelligible, all the sequence of thought here necessary being, Unintelligible, Insufficient, Unprecise, Inaccurate, False. But it has been shown that this great point is not even unintelligible to Mr. Mill. All that he is able to do, in order to give an air of truth to this assertion, is to descant upon two words, 'Form' and 'Matter,' sometimes used in explaining the expression 'Thought as Thought;' and since these two terms have technical meanings, and are therefore, in these meanings, unintelligible to the general reader, Mr. Mill hopes this air of truth is thus obtained, and all the more effectually obtained, by the presence of the three Giants marshalled, as one supposes, upon his side. No Metaphysician sees the least difficulty in understanding the expression 'Thought as Thought,' nor in understanding the terms 'Matter' and 'Form,' employed to explain it. Nor probably does Mr. Mill. No, not even Mr. Mill. He seems to do so. He is bound by his engagement to seem. That is what he is here for. But he guards himself against the harsh conclusion of his employers in his usual covert manner. Drawing on the Shoes of Swiftness, he concludes his remarks upon Hamilton's Cardinal Point in Logic, by owning, *more suo*, in terms intelligible only to the few, that even what he said about unintelligibleness was all fun,—that we can very well understand,—that even the general reader ought to be able to understand,—Hamilton's language to mean what Hamilton intends it to mean when he says that Logic treats of Thinking, irrespective of the subject or matter which we think about. He admits that, whatever difficulties may be supposed to attend the technical terms 'Form' and 'Matter,' not only the scientific but the unscientific can find Hamilton here perfectly intelligible. So that Hamilton's Cardinal Point of Logic, as Mr. Mill justly calls it, is true; and, what is still more remarkable after all Mr. Mill has said, this Point is even in a general way, and for the ordinary reader, intelligible enough. Mr. Mill's withdrawal is less covert than usual. It is as follows:—'We may, however, in a general way, understand 'Sir W. Hamilton to mean' (which is his Cardinal Point,—all that he or any Logician pretends to mean), 'that Logic is concerned 'with what the *mind does* when it knows or thinks, irrespectively 'of the particular *things* which it thinks about' (pp. 384, 385).

4. *Logic does not treat of Nature's Laws at all. It only treats of human laws. It only treats of the precepts or rules which enable us, in our reasonings, to conform to Nature's Laws.*

We see, from what has been said, that in Philosophical language the term 'Form' is technical, and does not denote 'shape.' We see also that 'the Form of Thought,' and 'Formal Thought' are mere synonyms for 'Thought as Thought,' *i.e.*, for Thought or Thinking, irrespective of the subject we are thinking of.

But Hamilton advances to a further explicitness in his Definition of Logic. To say that Logic treats of mere thought without reference to what we think about, is not enough. The science of Thought generally is Psychology. Logic is only that branch of this Science which pertains to the *a priori* Laws of the subject. Let us here employ a little analysis rendered necessary by Mr. Mill's confusions. The Science of Thought, in its more extended sense, is the Science of what the Immaterial Entity undergoes or does when it perceives and thinks,—the Science which deals with Sensation and Memory, the Association of Ideas, the Imagination, the Passions, and various other forms of thought, whether facts or operations, some of the operations being Reasoning, Comparing, and Conceiving. All this constitutes the subject of Psychology or Mental Philosophy, which Science, like Astronomy and all other Sciences except Logic and the Mathematics, *i.e.*, like all other mixed Sciences, has one portion of it contingent and another portion of it *a priori* or necessary,—one portion of its matter which can be thought of as variable, and one which cannot be so thought of. Now as the Mathematics only treat of what is not contingent in Physical Science, so Logic only treats of what is not contingent in Mental or Metaphysical Science,—of what is necessary or *a priori* in it,—of what, in it, it is impossible to conceive otherwise than as it is. Hamilton, therefore, in order to distinguish Logic from Psychology, defines Logic as that branch of knowledge which teaches us how to be guided by the necessary Laws of the Immaterial Nature, in our efforts to test or ascertain truth, but which laws, as is the case with all *a priori* laws, are entirely irrespective of the mere matters of fact to which we in any case apply them.

We have also, in Astronomy, what is *a priori* and what is contingent,—what on the one hand we can discern to be true without either seeing it or being told it, and on the other hand what we can only discern to be true when we see it or are told it. We had not, for instance, *a priori* knowledge that the orbits of the planets were ellipses, but we do know *a priori* that, since they are ellipses, the curves and foci of these ellipses stand in certain *a priori* or necessary relations to one another.

Likewise in the Science of Forces or Dynamics, we have, in the same way, the Contingent as well as the Necessary,—the *a priori* relations and the *a posteriori* facts,—that which we can discern to be true without experience of it, and that which we can only discern in each case, through either our own experience or that of others. The *a priori* laws of Dynamics belong to the Mathematics, but they are not the less the laws of Dynamics upon that account; nor does their being the laws of Dynamics render them incapable of being therefore a portion of the Mathematics. But the Science of Dynamics extends over its contingent matter as well as over its matter that is not contingent. It is clearly a misappreciation of facts either to say that a portion of Mathematics is not a portion of Dynamics, or to say that, if it is, it is therefore all of it. Whether the moving power is a weight or a horse, is a contingent and *a posteriori* inquiry, and has nothing to do with the Mathematics. But how an equal amount of either force will, under certain circumstances, modify the other, is neither a contingent point nor one *a posteriori*. It is *a priori*, and mathematical, and necessary.

We see, then, that in a Science there can be, and are, *a priori* relations existing between *a posteriori* facts. And this takes place in Psychology as much as in Dynamics or Astronomy or any other mixed or inductive Science. Just as in Astronomy, all its *a priori* laws, facts, principles, or relations (call them by what name we may) are treated of in the Mathematics, and constitute a portion of Mathematics, so likewise all the *a priori* laws (facts, principles, relations) that present themselves in Psychology are treated of in Logic *as the ground* of the rules which Logic teaches. Logic is thus the Mathematics of Thought as Mathematics are the Logic of Matter. And for this reason Hamilton defines Logic to be the Science which treats of the Necessary Laws of Mental Science or Psychology,—the Necessary Laws of Thought as Thought, or the Necessary Laws of the Form of Thought, or the Necessary Laws of Formal Thought; the term 'Necessary' in all these places denoting *a priori*.

That Astronomy differs, and how it differs, from the Mathematics, and that Psychology differs, and how it differs, from Logic, is therefore what any one who understands the terms employed can see without the least difficulty, and can courageously state in his own words without the least danger of mistaking anything. We see that Psychology contains one department of Logic, and that Logic contains one department of Psychology, or in other words, that there is one subject (viz., the Necessary Laws of Thought) common to both Sciences.

This being so, what sort of intellect shall we attribute to a young lady of fourteen, who has been made acquainted with the import of the above terms, yet who will tell us that she cannot understand how the same subject can be a portion of two different Sciences, nor venture to express the exceedingly abstruse point in her own words? (p. 385) or who, when she does venture to do so, tells us that of course, by Necessary Laws, we do not mean *a priori* Laws, but laws which are Necessary in the sense of *requisite* for the full development of the Science to which they apply (p. 386); and that it seems strange to her that we should speak of that which is Necessary in Astronomy, as not being in astronomy at all, but as something belonging to another Science? What should we think of this young lady if she told us that, as she understands matters, there is, in this way, a Science, Astronomy, which is the Science of the heavenly bodies and (among other matters connected with them) of their orbits and their magnitudes, and yet that another Science, Mathematics, is required to teach us what is *necessary* in these orbits and their magnitudes? There is a portion of the properties of the heavenly bodies which is expressly excluded from the Science which treats of the heavenly bodies, to be reserved as the matter of another Science; and, most strange of all, this portion is precisely that which treats of its Necessary properties! Those which are merely contingent, the child thinks,—such properties as may or may not appear,—the properties which are inductive and not common to all the heavenly phenomena, or do not belong to them at all times,—these she supposes us to mean that Astronomy knows something about; but the Necessary properties and Necessary Laws,—such as cannot but appear,—the properties which all the heavenly bodies possess,—without the possession of which they would not be heavenly bodies at all,—these properties, such as the *a priori* Laws of their magnitudes and orbits, Astronomy knows not of, and it is the office of a different Science (Mathematics) to investigate them. What, I ask, should we think of such a child? and what when she remarks further, Why, this seems as strange to me as if you told me the Science of Dynamics, which you have just explained to me, was a story of windmills and watermills, and had nothing in it whatever of what is so *a priori* and necessary to it,—the laws of given Force? Should we not be disposed to think from such a reply that this child was rather slow of comprehension even for a little girl of fourteen? or should we not at least be disposed to drop into the shortsightedness of those who hold that neither a girl's nor a woman's intellect can grasp such things? Can we not, all of us, point out girls of that age, and less than that age, whom, when the words and things were explained to them, this point would not perplex? I have therefore the hardihood to maintain, in spite of all his critics, that it has not perplexed Mr. Mill. He knows very well that the words *a priori* and Necessary do not here, as he pretends, mean *requisite*, and that all the Sciences are so interwoven with one another, that what is part of one is constantly, nevertheless, part of another also.

But, though Mr. Mill sees this as well as a girl of fourteen, things of course go on otherwise in Pantomime. Jack could not afford not to make these two confusions which, we have just seen, no child of fourteen with ordinary intelligence could possibly make,—viz., that 'Necessary' here means 'requisite,' and that two Sciences can no more have a common segment than two straight lines can. Jack boldly reads to his audience (p. 385) Hamilton's clear statement, that Psychology consists of two classes of phenomena—those that are *a priori* or necessary, and those that are *a posteriori* or contingent, and comments upon it with the most effective drollery, saying, like the stupid little girl, that 'If language has any meaning, this passage must be understood to say 'that that which is *a priori* or Necessary in Psychology denotes 'only, and can only denote, that which is necessary to the Science, '—that which is necessarily present in it,—that which is requisite 'to produce the Science,—that which cannot well be done without; 'while the *a posteriori* portion of Psychology is that which is unnecessary to the Science, that which can be dispensed with, which 'is not requisite, and this being the case (says Jack), we are landed 'in a strange conclusion. Now hear, my friends, what it is.— 'There is a science of thought, Psychology, with some *a priori* 'thought present in it as part of its subject, and other thought in 'it which is not *a priori*, also part of its subject. Well, only 'imagine. We are obliged by the Giant to send for another science 'called Logic to come and teach us this *a priori* thought which is 'the most important,—the most necessary part of Psychology.' (A voice from the back of the Gallery, 'Logic is not another 'Science. It is part of the same Science. It is the Psychology of '*a priori* thought.') 'Silence, Sir! Don't interrupt me.' (Laughter and cries of 'Bravo, Jack!' from all parts of the house.) 'There is 'a portion of Psychology which is expressly excluded from the 'science of Psychology, to be reserved as the matter of another 'totally different science, and this is precisely that portion of 'Psychology which is the most necessary to it—the most necessarily present in it—in fact its very *essence*. The merely contingent or unnecessary part of it—that which may or may not be in 'it—the portion which is not at all required in the Science, and 'which often is not in it, this, it seems to be said, Psychology 'knows something about; but the necessary portion of it,—that 'which we must have, or we can have nothing of it at all, this 'Psychology knows not of, and it is the office of a totally different 'Science, and kind of Science, to investigate truth in this portion 'of Psychology. We may next expect to be told,' pursues Jack, excited,—'We may next expect to be told that the Science of 'Astronomy knows nothing of Optics, or of Geometry, or of Algebra, etc. etc.; that it only knows of Neptune's light and Saturn's 'rings, of some moons and of some planets, of some distances and 'of some orbits; and to be told that other sciences must be called 'in to teach us all about light, concentric circles, ellipses and 'arithmetical relations. Or we may next expect this dreadful 'Giant to tell us that the Science of Dynamics knows nothing of 'the laws of Motion, the—the—' (Jack has recourse to a slip of paper in the palm of his hand)—'the composition of forces, the 'theory of continuous and accelerating force, the doctrines of 'Momentum, and Vis Viva, etc. etc.,—that the Science of Dynamics 'knows nothing of all these things, and that it only knows of wind 'and water, of animals and steam-engines, and the other moving 'accidents by flood and field. What can be more absurd than this, 'Mr. Giant? That which is the Necessary part of a Science is precisely the part which does not belong to it! That which is contingent or not necessary in Dynamics,—the "moving accidents" 'do indeed belong to the Science of Dynamics; but its *a priori* 'principles, *i.e.*, its most requisite principles, belong to a different 'Science, viz., to Pure Mathematics! And so in Astronomy. The 'necessary part of Astronomy does not belong to Astronomy! 'Nor the Necessary part of Psychology to Psychology! etc. etc.' (Thunders of applause, during which the Giant disappears in a cloud of words elaborated around him by Jack, with great scenic effect.)

And we are required to believe that Mr. Mill did not propound all this in fun! We are required by his Patrons to suppose that he knew no better! Is it,—I ask again and again,—is it at all likely that this should be true of him? Is it not quite certain that Mr. Mill knew the difference between the two significations of 'necessary'—between 'requisite' and *a priori*—as well as a child of fourteen, and that there is nothing new or extraordinary in part of one Science constituting a Science by itself, with a name of its own, as Trigonometry is a part of Geometry? Is it not quite clear from this page 386 alone, that this book of Mr. Mill's is a mere controversial Squib,—and that our clever little Jack ought rather to be applauded than condemned?

But we must go on. When Hamilton speaks of Logic as expounding the *a priori* principles of Psychology, and as giving us practical precepts for the indispensable conformity to these Principles, Mr. Mill is not satisfied with saying that this empties Psychology of its most requisite, most *a priori* portions (for Mr. Mill considers that the being *a priori* is an attribute that admits of degrees), and with objecting on this ground to Hamilton's defining Logic as treating of the *a priori* portion of Psychology. Mr. Mill further tells us that although Hamilton, as Mr. Mill at length admits, agrees with Whately in holding Logic, as well as most of the Sciences, to have not only its practical side and its practical precepts, but also its scientific side, and its *a priori* Laws, Hamilton does not here mean what he says (pp. 386, 387). Hamilton does not mean that there are *a priori* Laws of Thought treated of in Logic at all, but only practical Precepts. 'What I have said,'—cries Jack with affected calmness, but stung to the quick by a gadfly (p. 387) of which the initiated alone are cognizant,—'What I have said about 'the *a priori* Laws of Thought being taken out of Psychology to 'put them into Logic, and about the objection which thence arises 'to the Giant's Definition of Logic, is true enough in itself,—take

'Jack's word for that,—true enough, if we allow the Giant to mean 'what he says, and what, it must be admitted, he expressly and 'repeatedly tells us he does mean, viz., that Logic treats of *a priori* 'Laws (p. 386); but we must not allow Giants to mean what they 'say. We must, for circus purposes, be permitted to describe this 'one, at least, as not meaning what he says he means. We must 'describe him as saying that there are no *a priori* or Necessary 'Laws at all in Psychology to take out of it, but only a few Practical Precepts out of which it is proposed to construct the Science 'of Logic; or, at least, as saying that the *a priori* Laws of Thought 'are not in Logic but in Psychology (pp. 388, 389), and that the practical side of this latter science has certain precepts belonging to 'it, which precepts and rules are to be called the Science of Logic, 'and although the thing sounds rather nonsensical (p. 391), and we 'thus make the Giant inconsistent with himself' (at these words Jack's little eyes flash, and he cleaves the air with the Sword of Sharpness); 'yet it is in the statement we thus impute to him that 'I can agree with him, not in the other statement about the *a priori* 'Laws in Logic, and Logic being an *a priori* science. For, as I have 'said, I do not see how part of one science, especially the part of 'it which is necessarily present in it, can be part of another science; 'and you all valiant knights and ladies fair, who have been all this 'long time past tied up by the hair of your heads, you can see, as 'easily as I do, how a science can consist wholly of Precepts.' (Loud applause in the Upper Galleries.)

I need not here delay even the most uninformed reader with much explanation. The Laws of Number and Geometry are all *a priori.* The precepts given to the Accountant or the Carpenter to teach him how to conform unconsciously to these laws—the practical rules founded upon these laws—do not constitute a science. What could Mr. Mill mean by saying *seriously*, as his cruel friends tell us he does, that Logic, which is, as Whately and Hamilton agree about, both a Science and an Art in these senses of the words, consists wholly of precepts? Or are Mr. Mill's friends in jest as well as himself? Do they not see that he backs out of this fun at page 391, where he owns that a science of Precepts would be nonsense, and that Logic is the Science of the *a priori* Conditions upon which those precepts depend through which we form consistent and coherent inferences?

But further, that 2 and 2 make 4, is an *a priori* or Necessary

Law. That the mark of the mark is a mark of the thing marked, and that the part of the part is a part of the Whole, are also *a priori* Laws. Gravitation is a Contingent Law. That fire burns is a contingent Law. A free intelligence, in its acts, may disobey both kinds of law, if it chooses, or may do so by mistake; in either case, however, it always fails to do what it is supposed to aim at. But unconscious matter can never disobey either kind of law. The law therefore, whether *a priori* or contingent, is the primary condition upon which all valid action is possible, whether in engineering or in thought. To the Immaterial Entity, being free, it is optional to obey this law or not; which fact gives to the *a priori* Law 'the form of a precept' for a being of this nature. To the unconscious thing called matter,—the Material Entity, not being free, this obedience is not optional. Matter obeys only, and can only obey. It receives no suggestions nor precepts. Neither an *a priori* law nor a contingent law is for it preceptive, or in the form of a precept. Such is the substance of what Hamilton states in the quotation at p. 387, and this is the gadfly which just now stung Jack to such exasperation. Hamilton says a little too jarringly for Mr. Mill's sensitive nerves, that a man has more will in him than a stone has, and that Will is more free than no Will. *Hinc illæ lachrymæ.*

Any student who is advanced enough to know that a 'Necessary Law' does not mean a requisite law, or a law desirable towards some end, but an *a priori* law, and who is discerning enough to see how an *a priori* Law turns into a sort of precept for a man, indicating to him how he ought to act, but cannot possibly be even imagined to turn into a precept for a stone, will be able to derive some amusement from Jack's wild gestures with the Inconsistency-Sword,—the Sword of Sharpness,—in the note at pp. 387, 388, on Hamilton's 'necessary facts' and Montesquieu's 'unnecessary laws;' where our great Scottish Metaphysician is playfully supposed not to see, except every second or third day, that a Law of Nature is not a human law, and that an *a priori* principle is not the mere device of some village schoolmaster. The whole of this incident is well got up, when we bear in mind the purpose of it, and when we bear in mind that poor little Jack is supposed to have just been stung in a sensitive part by a very disagreeable species of horsefly, called 'The free Intelligence.'

Another of the 'crowned' thoughts here 'sown,' as Mr. Mill expresses these things, is this. Mr. Mill having assured us that we

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must not suppose 'our author' to mean what he expressly said (p. 386), and that by *a priori* Laws 'our author' meant only the practical precepts these Laws render necessary (p. 387), that these practical precepts are what 'our author' intended to speak of as the Whole of Logic, excluding from it all scientific investigation, and that here, in this remote region of nonsense, Mr. Mill and his author are for once agreed and happy,—having assured us of all this, Mr. Mill sums up thus:—It is not then with the *a priori* Laws of thinking, but with thinking according to these *a priori* Laws,—*i.e.*, with valid thinking,—that Logic is concerned (p. 388). We might of course ask Mr. Mill, how on earth Logic could teach us to conform to the Laws of Nature, if it did not first teach us what these laws are? But would it not be more to the purpose to ask Mr. Mill's friends why they so ruthlessly persist in assuming that Mr. Mill is serious when he tells us that it could,—when he tells us that Logic *could* teach conformity to certain *a priori* Laws without explaining to us the *a priori* Laws to which we should conform? and when Mr. Mill writes (p. 388), 'It is not with Thought as Thought, but only as valid Thought, that Logic is concerned,' is it of Mr. Mill or of these ruthless friends that we are to ask what on earth is the meaning of saying, 'It is not with Calculation as Calculation, but only as valid Calculation, that Arithmetic is concerned?' Can anything be more childish and manifestly in mere jest than such a remark? Or are these friends doltish instead of ruthless,—doltish enough, themselves, to see anything that Mr. Mill could have been serious about in the remark?—And an oversight it is not, for lower down in the same page the same preposterous observation is repeated:—'Logic is not the theory of Thought 'as Thought, but of valid Thought; not of Thinking, but of correct 'Thinking.' Will Mr. Mill's friends be good enough to tell us what Science is supposed to be the Science of thinking incorrectly? Mr. Mill has written two volumes on something which he calls Irratiocinative Logic. Is that perhaps the Science here alluded to?

Thus far we have gone over Hamilton's Definition of Logic, as quoted by Mr. Mill at page 373, and as criticised by him in the fifteen subsequent pages;—and we have seen that in no one particular is Mr. Mill able to impugn its accuracy, or even willing that enlightened people should think he really seeks to do so. And the reader who has patience to follow him attentively through the rest of this chapter will find the same principle of make-believe carried out ably and gravely to the last page of it, with an ability in fact so great and so assiduous that we lose sight entirely of the heavy writer on Political Economy, and have nothing before us to the end, but an exuberant little Jack in full strut, sword in hand, with his little cap of knowledge on, and very saucy. Those only, however, who are well acquainted with the points in question can fully enter into the histrionic skill and spirit and always marvellous self-abnegation with which this portion of his little Pantomime is managed by the Artist. His rare power of darkening the subject, as he calls optical illusions, and his endeavours to give an intelligible interpretation to what he affects not to understand, are masterpieces in their way, but which a distinct knowledge of the very simple points discussed will help to throw ont into tenfold effect. I therefore request the reader's attention to a few more of these points. They are all extremely simple, and not altogether unprofitable to reflect upon, irrespective of the Pantomime.

GROUNDS FOR NOT INTERPRETING HAMILTON BY WHAT HE SAYS.

The first of the points in question is a delicious *morceau* from p. 389 to 396 inclusive, which I strongly recommend to the attention of all those readers of Mr. Mill's book who still fancy it improbable that he should not have been in earnest. It will be found to be a grand effort on Mr. Mill's part, and ingeniously contrived, to justify himself in no longer allowing Hamilton to mean what Hamilton expressly says (p. 386, *sub finem*),—in no longer seeking for Hamilton's meaning where Hamilton professes to give it, but seeking it on the contrary only in passages garbled from all the other portions of his works (pp. 396, 397). To accomplish this, he affects to think that Hamilton's Definition of Logic has the word 'Forms' in it, and in order to decoy us also into this impression places it in the heading of each page ('Is Logic the Science of the Laws or Forms of Thonght?') He then fastens upon this word 'Forms,' which has several significations, by the aid of which significations and the distinctions thence resulting, he lashes himself into such a frenzy of exasperation that one is only amazed at the extreme moderation of the desperate step he, at last, indignantly resolves to take:—'I renounce any further attempt to deduce Sir 'W. Hamilton's conception of Logic from his definition of it. I 'collect it from the general evidence of his Treatises' (p. 396). In other words, as at page 386, 'I decline to seek our author's meaning any more in what he expressly says. I shall seek it for the 'future in what he does not expressly say.' Now I appeal to any critic or Patron of Mr. Mill, whether such a speech, or the exasperation which prompted it, can be thought of for an instant in any other light than as a literary jest. What, at least, is this, if not a jest? or, What are we to call a literary jest if this is not one?

The lashing process is carried on as follows:—The word Thought (as has been so often explained, pp. 384, 385) has two significations. It denotes the subject we think about and the spirit's action about that subject. The first is called Thought, the Matter, and the second, Thought, the Form, or the Matter of Thought and the Form of Thought. This latter is also called Formal Thought, and Thought as Thought; also pure Thought, Thought proper, and merely, Thought, without any qualification. Here 'Form' does not mean 'kind.' It means Thought irrespective of its subject-matter. Nor does the word 'Form' here mean Law, if it ever means it. Thought the Form does not mean Thought the Law, nor does the Form of Thought mean the Law of Thought. There is nothing whatever obscure or confusing as to the meaning of the word 'Form' in this place, nor as to whether it is to be in the singular or in the plural. Mr. Mill himself explains it (pp. 384, 385) to be not a class (or kind) of Thought, nor yet a Law of Thought, nor anything else whatever belonging to Thought, but only Thought itself,—the Form so called, —only *one* thing,—only 'what the mind does when it knows and thinks,'—the act or fact of thinking. It would require one to be a perfect numskull in order to enable one to find any confusion between this Thought which we call Form and either the Laws of it, so called, or the kinds of it, so called, or any of the other things called Forms. Yet this is the confusion which Mr. Mill so self-denyingly professes to start with, and has artistically allowed to agitate him to this singular extent. He considers that Hamilton confounds everything under the name of Form in his explanations, whatever he may do in his Definitions; and that his Definition of Logic really amounts to saying, according to his own use of the word, that Logic teaches the Forms of the Forms of Thought. But Mr. Mill is too moderate in this statement of his case against Hamilton. His case, it will be seen, is at least twice as strong as that.

In his *exposé* of this alleged confusion in Hamilton's language there are three—perhaps we should rather say four—stages :—

(1.) As Hamilton speaks of Thought the Form, or the Form of Thought, we may, Mr. Mill thinks, without altering the meaning, extend the expression to the plural number, and speak of Thought the Forms, or the Forms of Thought (p. 389), although neither Hamilton nor any one else has ever done so. The expression, 'the Form OF Thought,' seems to have deceived Mr. Mill. For we do not here speak of Thought as its own Form, nor as having a Form ; but as being the Form of its subject-matter. The safest expression for a novice is 'the Form Thought,' or 'Thought the Form.'

Our first stage then is 'The Forms of Thought.'

(2.) He next proceeds to tell us what Hamilton calls the Forms of these Forms ;—the Forms that belong to Thought the Forms. These are Conception, Judgment, and Inference (p. 390) ;—three kinds of Thought. Hamilton does not indeed, Mr. Mill admits (*ibid.*), say expressly that these are three Forms at all,—three Forms, in any sense of the word 'Form.' But Mr. Mill thinks that Hamilton leaves this 'to be picked up' (pp. 390, 396) ; and, this being the case, we have, according to Hamilton, not only the Forms of Thought, or Thought the Forms, as above, but we have three Forms of these Forms.

Thus our second stage is 'The Forms of the Forms of Thought.'

(3.) The third signification of 'Form' employed by Hamilton is when he speaks of *a priori* Laws as *a priori* Forms (pp. 385, 386), of which there are three in Logic,—three *a priori* Laws belonging to Conception, Judgment, and Inference,—viz., the Law of Identity, the Law of Contradiction, and the Law of Excluded Middle (p. 417). Here, then, are the three *a priori* Forms (or Laws) of the three Forms (or kinds) of 'Thought the Forms,' or, of 'the Forms of Thought.'

We thus arrive at the third stage of this confusion, where Logic teaches the Forms of the Forms of the Forms of Thought.

(4.) Mr. Mill does not allow us to stop here. He reminds us that, beside the three *a priori* Laws of Logic admitted by him to be *a priori*, if anything is so (p. 417, *sub fin.*), there are numberless precepts or rules belonging, as it were, to each of these,—the precepts or rules of each *a priori* Law,—the rules by which we are enabled to conform to the three *a priori* Laws of Thinking ; and he tells us that Hamilton calls these precepts also 'Forms' (see p. 387 near the top, and the headline of every page of the chapter). This statement of Mr. Mill's, it is needless to say, is wholly inconsistent with the fact. Hamilton never calls precepts 'Forms.' But this being granted, we have these Forms (or precepts) of the three *a priori* Forms (or Laws) of the three Forms (or kinds) of 'Thought the Forms.'

This is the last stage. We here arrive at the extraordinary phrase which, according to Mr. Mill, gives Hamilton's Definition of Logic thus:—'Logic is concerned exclusively with the Forms of the Forms of the Forms of the Forms of Thought;'—something that reads very much like, what in truth it here is, the edifice that Jack built.

Mr. John S. Mill apparently, from some just apprehension that the thing, if wholly given, would betray him and look too much as if he was in jest,—would, in short, be too ridiculous, has suppressed two of the 'Forms,' indicating them in his remarks as above referred to, but not recapitulating them, and limits himself to saying that, according to Hamilton, Logic is not only concerned exclusively with the Forms of Thought, but exclusively with the Forms of these Forms (p. 396). We see, however, that, according to Mr. Mill, it is in reality concerned exclusively not only with the Forms here mentioned (of other Forms), but with the Forms of these,—nay, exclusively with the Forms belonging to the Forms of these. And this is the climax; as it well may be. Here it is that in a paroxysm of theatrical indignation, knowing the whole, but not venturing to utter more than half of it, the exasperated Jack enunciates that *naïve* but memorable statement:—'I shall 'not seek to understand Sir W. Hamilton's Definition any more. 'I understand him, and I condemn him. Oh, don't I? but I shall 'not even try any longer to decypher what he says. After these 'Forms of Forms, I fairly renounce any further attempt to deduce 'what he means by Logic from what he says about it' (p. 396). Poor little Jack!—and that he should have been driven to this sad alternative after having done his best for so long to give the Giant's words 'an intelligible interpretation,' not indeed by means of the words themselves, as common wits do, but by means of Jack's own views of that which these words profess to explain (p. 395).

Intermixed with the foregoing entanglement, and 'ancillary' to it, we have four other entanglements which those must not be allowed to overlook who seek to prove Mr. Mill in earnest.

1. We sometimes, as already observed, think about our thoughts as well as about the subjects of them (p. 384). In other words, our thoughts themselves are capable of becoming the subjects of our thoughts; not the same thoughts, of the same thoughts; but some, of others. When they do so, which happily is very often, we find Thought (the Form) turned into Thought (the Matter) to Mr. Mill's great confusion, as he pretends, and great disgust (p. 390). Yet what is there in this that can possibly confuse or disgust any man,—*a fortiori*, one of Mr. Mill's discernment? Will his Patrons and Critics be good enough to inform us what they mean when they speak of Mr. Mill as serious in saying that all this is extremely confusing to him? It is not so to others;—not so, even to the child of ten or twelve, when told that we can think about our own thoughts.

2. The word 'Forms' does not, as we have seen, enter at all into Hamilton's Definition of Logic. ['Logic is the Science of the (*a priori*) Laws of Thought as Thought.'] But to make it appear that it does, and that every careful thinker acts in this respect differently from Hamilton, other Giants, with whom we are pretty familiar in these pages, are introduced, by the head and shoulders, in the haze of this *embroglio*, seeming to condemn Hamilton for defining Logic with the word 'Forms;' one of them, however, merely saying that, in *his* work on a different subject, he employs the word 'Forms' to denote the attributes of Material things (which is matter, not Thought), and the other saying nothing at all except what the stage-tumult renders almost inaudible, that he entirely agrees with Hamilton (p. 390).

3. Another of the minor entanglements in this case consists of the statement (from p. 391 to 396) that Thought as Thought, *i.e.*, Thought the Form, whose *a priori* Laws constitute the subject of Logic, has, according to Hamilton, two aspects. Each case of it may be regarded (as any act may be regarded, and as the import of the term 'act' itself may be regarded) either as a process or as the result of a process,—an operation, or the product of an operation. The same thing has two aspects. The operations *are* the Acts, and the products *are* the Acts. It is in the latter aspect of the thing, —in the latter character of Thought Proper, as product or result, that Logic deals with its *a priori* Laws. It deals with the *a priori*

Laws of Thought as Thought, the term 'Thought' being here viewed as the term Act is viewed when 'Act' is employed in the sense of a result or product, not in the sense of a process or operation. Mr. Mill expresses himself delighted with this distinction. Let this be well noted. As usual, and of course, he finds all sorts of fault with it, and growls over it to no end. It is too deep for the puzzled reader. It is an explanation which throws all back into darkness. After having got through the extremely intricate task of understanding what is meant by Thought as Thought, and after having learnt that it is synonymous with Thought the Form, or the Form of Thought, which expression he tells us he never heard before, and after becoming confused to the extent of fancying that Thought the Form was all the same thing as Thought the Forms, an expression which really no one ever heard of at all until Mr. Mill invented it, the puzzled critic describes himself as still further puzzled by his go-ahead author in a fresh paragraph, in which Thought as Thought or Thought the Form is also called Thought Proper, and in which it appears, a little more clearly than it did before, that the same thing which is a process, act (action), or operation, is also, in another of its aspects a product or result,—that, in short, the products of the spirit *are* the acts of the spirit, and the acts the products (p. 392). Mr. Mill adverts to what Hamilton with admirable truth says, of our not being able to define a thing by its aspects, although, as Hamilton likewise says, we can treat of it in one of these aspects perfectly well to the utter exclusion of the other aspect. But notwithstanding that our critic finds five pagefuls of fault with our treating Thought Proper in Logic as a product of the spirit, and not as an operation of it only, he is nevertheless quite enthusiastic in praise of this way of viewing matters ('I give my entire adhesion to this distinction,' p. 391), and even proposes, with his usual generosity, *i.e.*, *more suo*, to found a second theory upon it, for clearness' sake, and to remodel the Definition accordingly, just as he so neatly did in the case of Judgment (pp. 343, 345, 361).

4. According to Mr. Mill, Hamilton here twice maintains that a thing can produce itself. In the first case, Hamilton, we are told, says that, in thinking, the product is the operation, and at the same time is the product of the operation. Therefore the product is the product of itself. In the next case, Hamilton, we are told, says,

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with Brown, that the chair is the Spirit perceiving it, and that thought is the Spirit thinking this thought; in short, that a chair perceives and a thought thinks. But if the chair is also the product of that which perceives, it is the product of itself; and if thought is also the product of that which thinks, thought is its own product. Is it possible that Mr. Mill's friends will pretend that here also he is in earnest? They will find, upon closer examination, that Hamilton holds Thought to be a product of the Spirit (or Immaterial Entity), whether the thing called a product is an operation also or not; and they will likewise find that beyond all doubt, or room for doubt, the progress of an operation is, nevertheless, that which produces the termination of it; and the product here in question is a terminated operation. Is it to be supposed that Mr. Mill thinks a terminated operation and an unterminated one to be one and the same thing, and that if one were called the product of the other, this would be making a thing the product of itself? Why, Mr. Mill seems to have succeeded in inoculating his own Critics with his fun. Or are his critics always his Employers and Patrons as, in some cases, they are known to be? And again: Where does Hamilton agree with Dr. Brown in holding that one thought can perceive another? Mr. Mill is not able to say where. Are his friends able? certainly not. And is Mr. Mill not to be supposed to know that every separate statement massed together at the foot of page 392 is utterly false,—utterly inconsistent with the facts? Hamilton *does* hold with Berkeley that an idea is a concrete object distinct from and in no sense a portion or attribute of that Immaterial Entity, which is the percipient Element of our Nature, and which solely for the sake of brevity Mr. Mill calls 'Mind.' Berkeley does *not* hold that our ideas are contained in this Immaterial Entity, 'like furniture in a house,' nor as any one extended thing is contained in another extended thing. Berkeley held that the relation was entirely different. Locke *never* held—Locke was never supposed to hold, even by his enemies, that our ideas are modified spirits, *i.e.*, Modified Percipients; such a notion never entered into Locke's head. Hamilton *did* hold the same as Locke held upon this point. Hamilton held that our ideas are not modified Percipients. Again; Hamilton does *not* hold with Brown that a sensation can perceive or that a thought can think. When, therefore, Hamilton says that thought is the product of the Percipient (or Mind) he by no means says, and Mr. Mill knew very well, cruel Critics, that Hamilton by no means says, the Percipient (or Mind) is therefore its own product.

But if Mr. Mill's critics will allow Jack no play, which here as elsewhere makes Jack a dull boy,—if they will not allow that Mr. Mill was here in jest, in what light will they regard what follows? Hamilton, we are told, could have got out of his supposed difficulty of supposing that our ideas think, only that he could not! This is Mr. Mill's statement (pp. 393, 394). He could have avoided a difficulty which never existed by not having done something which he never did! He could have 'escaped the self-contradiction' were it not that he supposed the Immaterial Entity or Percipient not to be in all things passive,—to be active in some cases,—to create, for instance, the facts which it remembers and the sounds which it hears! Is that pantomime, Critics and Patrons of Mr. Mill, or is it not? It is true that although Mr. Mill clearly wishes to be supposed to be under the impression that this is a discovery of his own, and leaves it therefore, as he solemnly announces (*ibid.*), 'for the consideration of Philosophers,' he nevertheless has, *non more suo*, abstained from proposing any name for it; and true that there is here therefore an absence of the comic, which does not quite accord with the theory of the book's being all comedy. But we cannot expect *toujours perdrix* from so skilful an artist as Mr. Mill; and it must be admitted that he has managed all this part of his subject, about 'Forms,' with considerable dexterity. It was a happy thought to give us these interludes within interludes, like the boxes of the Juggler. The haze is beautiful; the obscurity complete. Whoever reads these pages of his book must admit, even without understanding them, or reading any others, that Sir W. Hamilton's Logic and Definition of it are utterly wrong, and that both are utterly rejected by Mr. Mill.

But Mr. Mill does not here conclude his chapter. He has seven or eight minor snarls before he does so;—snarls, as his critics call them, but more truly to be regarded as playful efforts to raise a dust. They are, each of them, worth attending to.

OF A VALID INFERENCE FROM FALSE PREMISSES.

First of these, he returns to a point already mentioned, on which he raises the question, Can there be such a thing as correct thinking upon incorrect data,—a valid inference from false premisses,—

an *a priori* relation really subsisting between *a posteriori* facts which are only hypothetical? All the world allows that there can, and that all inference is of this nature. Jack here enters the lists single-handed against all the world, boldly asserting that there cannot; and introducing a second and a third Giant, albeit adverse ones, to assist in maintaining this assertion; for, much to Jack's credit, it is to be observed, he somehow or other is always more successful, or (which is quite the same thing) seems to be so, when he has two or three Giants to deal with than when he has but one.

Mr. Mill frankly tells us (pp. 396, 397) that, notwithstanding the foregoing large amount of bungling, and pottering, and sham, entailed upon him by his Pantomime, but thus acknowledged to be useless, all that he is really able to regard as distinctly wrong in Hamilton's account of Logic, is that it does not agree with his own—that the account agrees with that which all other writers except himself give of this *a priori* science. Hamilton says, as they all say, except Mr. Mill, that, like Geometry, Logic does not consider whether its premisses be true or false, but only whether its conclusions be necessary or not, *i.e.*, necessarily connected with its premisses or not. From this mere fact of Hamilton's not having abandoned all other writers upon this point in order to agree with Mr. Mill, the latter, with a gravity as grotesque as in any other part of his volume, declares Hamilton wrong,—utterly, irredeemably wrong.

Truth thus not the aim of Logic.

(*a.*) The first handful of dust thrown up upon this subject is this:—The end and aim of Logic, or the science of necessary inference is to aid us in the attainment of truth; and how can it do this, asks Mr. Mill, if its premisses or assumptions do not accord with fact as necessarily as its conclusion does with its premisses? (p. 397). Now, the obvious answer to this is, that Logic affords this aid by exhibiting to us the probability of the premisses which are contingent, as well as by putting into our hands other premisses which are *a priori* (p. 365). Logic, like Geometry, is an abstract, *a priori*, and hypothetical science; and in any such science, the necessary connexion of the conclusion with the premisses is all that is ever guaranteed. Geometry does not guarantee the parallelism of the two given parallel straight lines. It assumes both that and their straightness; and only shows us what follows necessarily from these two premisses or assumptions. This is also what Logic does.

It shows us what would follow necessarily from premisses if they were true; and shows us this whether we know them to be true or not. But it does not, at the same moment and in the self-same Syllogism, show us whether these premisses themselves are or are not true. These we must know in some other way, either from other premisses, or as facts of consciousness, which facts we have either through our senses, or through our understanding;—and there is in this nothing whatever calculated to disparage Logic; nothing to render it, what Mr. Mill declares it, unimportant, or useless, or unessential to accurate thought. On the contrary, there cannot be the smallest amount of accurate thought without it. Logic has the sole prerogative of *a priori* Truth, and by means of *a priori* truth it aids us in the attainment and in the uses of contingent truth. That is all it does for contingent truth, and all that it professes to do. But in the attainment of contingent truth, next to our senses, this is everything. Nothing that Mr. Mill has to propose to us does nearly so much for truth as this does; nor does anything whatever without this. Logic does not guarantee to us what is contingent as well as what is uncontingent. If it did, we should study—we should need to study—nothing else. But Mr. Mill well knows that nothing does that, and that nothing goes nearer towards doing it than a careful employment of Logic (the Science of Coherent Thought) in the establishment of every premiss. What might lead the general reader to imagine that Mr. Mill was serious in this place, and what Mr. Mill no doubt reckoned on as likely to have that effect, is that he has written what he calls 'a System,' and that in many parts of his present volume against Hamilton he speaks of this 'System' jocularly as superseding Logic, and as being entitled to be called Big Logic. It is therefore, perhaps, better to explain that this 'System' is merely a summary of the different ways in which Logic is employed in determining the assumptions or primary data—*i.e.*, the premisses in any science, or upon any subject. This synopsis comprehends Analogy-Logic (to which belongs Induction-Logic), the Logic of Chances, the Logic of Quantities, and the Logic of the facts of consciousness. The author enlarges especially on the Logic of Induction, and appears to labour under some misapprehension that Induction is a sort of Logic, and Chance a sort of Logic, and Analogy a sort of Logic. But what is the sense of saying that such 'a System' as this dispenses with Logic, or nearly dispenses with it, when it is wholly founded upon Logic, and when, without Logic, it would literally have no meaning—no existence whatever? Be that as it may, Mr. Mill well knows that there is nothing in his so-called Large Logic that guarantees contingent truth, nor anything in it that does more, at the very most, than show to inexperienced persons how Logic must be employed in substantiating or purifying the assumptions or premisses which are contingent. There is no pretext, therefore, of this kind, nor any other, for being led to think the less of Logic on account of its not guaranteeing contingent truth. Nothing can do that. Nothing can go nearer to it than Logic does. And anything fresh towards it that Mr. Mill's 'System' does, which assuredly is microscopic instead of Large, it does only by the aid of the *a priori* Inference or Logic. Logic, then, I repeat, aids in the attainment of truth, although its premisses are hypothetical, not only by testing the contingent truths which we possess, and indicating to us what other contingent truths we may look for; but by opening up to us a vast amount of truths which are not contingent.

A 'rightly framed' Inference.

(*b.*) The next handful of dust here thrown up into the air 'to darken the subject' is the expression 'rightly framed,' and our being asked, How can there be a rightly framed concept that is not of something real,—a rightly framed judgment that is false, or an *a priori* inference rightly framed that is inconsistent with the fact? (p. 397). Can it be possible that it should be necessary to reply to this? Will Mr. Mill's readers not see that he is here amusing himself at their expense? Is not my conception of a unicorn rightly framed? or of a living iguanodon in the garden, or of a spider the size of an elephant? If I say, with Mr. Mill, Man is a centipede as much as he is a biped (p. 361), is not that judgment rightly framed, although rather absurd? If I say, It is raining, is not that a rightly framed judgment whether it is raining or not? Is there no such thing as a false judgment? Are all judgments either true or non-existent? Mr. Mill's critics will find, as Mr. Mill well knows, that a rightly framed judgment does not mean a statement consistent with the fact, and that the only judgment which is not rightly framed is that which does not express what it is intended to express. And can there be no rightly framed conclusion drawn from false premisses? —no rightly framed syllogism, unless it is true? or must all such conclusions accord with facts as well as with their premisses? Do

Mr. Mill's friends really suppose him not to know that a correctly drawn or rightly framed inference may be false, and that an incorrectly drawn one—one not rightly framed,—may consist with fact? Is it now for the first time that we are to suppose Mr. Mill made aware of this? But again: If there can be no Concept, judgment, or inference except of what is true, then, *a fortiori*, there can be none of these things where there is nothing real,—where there is nothing that is either true or false; as when we say A is B, B is C, therefore A is C. Here is a pretty piece of business. Where is this indispensable groundwork of fact in Symbolic Logic? Yet all Logic can be so taught and so expressed. Are we to suppose that Mr. Mill has forgotten any little knowledge of Logic that he ever possessed, or that he really never possessed any? or are we not rather to say that he is jesting? that he is perhaps working at a little *pièce de théâtre* to laugh down the logical aspirations of his followers, or at least to aid the platform of the Rationalists with a squib,—that he is, in short, performing Jack the Giant-killer?—

Truth forcing its way into Fiction.

(*c.*) A third point put forward by our artist to make Hamilton appear wrong when he says that Logic is, like Geometry, an hypothetical or abstract Science, assuming its premisses correct whether they are so or not, is to be found in Mr. Mill's remark (p. 399), that the notion of true and false will force its way into every sort of Inference whether the premisses be true or false,—into those in Gulliver's Travels as well as into those connected with the Times of the Eclipses;—that the idea of true and false cannot be 'eliminated' from reasoning even in a Novel. Now this observation is perfectly correct; but does this make the premisses or alleged facts in a Novel true? The import of it is the very contrary of what Mr. Mill supposes. It recognises the great principle,—the central point of Hamilton's Logic, and of the Logic of all of us, that a rightly framed inference *will* be true,—necessarily true,—even from false premisses. All the reasonings of the Lilliputians, and of the traveller among them, are true enough. The notion of true and false forces its way into every page of the story, although every premiss of fact,—every *a posteriori* premiss, is false, and known to be so. We see then the enormous blunder committed, if not the wily joke played off, by Mr. Mill when he says that 'in

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'no case can thinking be valid (*i.e.*, reasonable, coherent, consistent, 'ratiocinative) unless the concepts, judgments, and conclusions 'resulting from it are conformable to fact,' *i.e.*, are true (p. 398).

But Mr. Mill says more than merely that this notion of true and false will force its way into the novels of the day as well as into Gulliver's Travels, and into the Stories of Jack the Giant-killer, and all the other Jacks; he says it will do this 'whatever pains 'Sir W. Hamilton and Mr. Mansel give themselves to make the 'notions of consistent and inconsistent, or of thinkable and un- 'thinkable, do duty instead of it' (p. 399). Does Mr. Mill mean to say that consistency is not truth? Does he mean to say that what is *a priori* is not as true as what is not *a priori*, and that if a novel, even Baron Munchausen, were incoherent,—were inconsistent with itself, and unthinkable in every statement, the notion of true and false would force its way into it as it now does? or does he suppose that as the notion of true and false does force itself into these fictions, these fictions are therefore true? Whom will Mr. Mill get to 'do duty' with him in such a Theory as that? Whom, even to suspect that he did not know better when he here propounded it?

THE PROTEST.—FIRST STATEMENT OF IT.

The Contingent not admitted into an a priori *Science.*

At length Mr. Mill abandons this point respecting the valid inference from false premisses as unassailable. He now begins to see, he tells us (pp. 399, 400), that what he has really to protest against in Hamilton and the other Giants in this branch of *a priori* knowledge is, not that they represent Logic as yielding a rightly framed and valid inference even from false premisses, and a rightly framed judgment which is nevertheless not true, but that they do not admit into this *a priori* Science called Logic, contingent Thought as well as *a priori* Thought, or the contingent laws of formal Thought as well as the *a priori* laws of it (pp. 399, 400). This is an important and a strange admission. It is no wonder, according now to Mr. Mill, that the Logicians do not ask whether a premiss is grounded on fact or on mere supposition, but think only of the conditions necessary for preventing errors from getting into the process of thought which were not in the premisses or assumptions. Such is, he now admits, the exclusive business of all who engage in the investigation of *a priori* truth. This truth he now fully admits, is being true to the assumptions, not true to the facts,—the inference being consistent with the premisses, not the premisses being consistent with the facts. Mr. Mill now admits that this is not what he ought to protest against, nor what he wishes to protest against. He begins to see, as his 'Examination' goes on, that Hamilton and Mr. Mansel had studied the subject much more closely and carefully than he supposed they had, or than he had ever done himself. All he now protests against in these eminent men is that they do not include in the *a priori* Science called Logic *all* that belongs to the investigation of truth as well as what is merely *a priori* in this investigation. Mr. Mill seems to think that this could have been done without confusing the understandings of the young men about whom he is so anxious, and that all the Laws of Formal Thought—both the *a priori* and the contingent Laws of it—might have very well gone under the one name of Logic (*ibid.*). Before he raised his pen, however, he seems to have seen that this would never do, and at once proposes that instead of calling *all* the Laws of Thought, Logic, the *a priori* ones should be called Formal Logic, apparently intending that all the contingent ones, with the principles of Chance, Analogy, and Induction, should be called Material Logic. Yet he afterwards bristles up indignant at this name of 'Material Logic,' or 'the Logic of this or that Material Science,' being applied to all that is not Inference or *a priori* in the Investigation of truth. Does he not, however, also see that these contingent Laws of Thought are Laws of Formal Thought just as much as the *a priori* Laws are so; and that, if they are to be called Logic at all, they have as good a right to be called Formal Logic as *a priori* Laws have? What can Mr. Mill have been thinking of when he threw away this advantage? Surely the *a posteriori* Laws of Formal Thought are as much entitled to be called Formal Logic as the *a priori* Laws of it are; and so the desired confusion could have been still carried on under the new name. But what can Mr. Mill have intended to convey when he says, that, speaking of Formal Logic, as concerned only with the *a priori* Laws of Thought, would have misled (p. 400) young men less than speaking of 'Pure Logic,' or 'Logic' as concerned with them? What is one misled into thinking by our confining the term 'Logic' to the *a priori* Laws of Thought and to the operation of these Laws? Is it being misled, to be reminded that there are *a posteriori* facts as well as facts *a priori*? that all are not *a posteriori* nor all *a priori?* that the Cathedral of Notre Dame being in Paris, for instance, is, though a fact, not an *a priori* fact, even when it is an *a priori* inference,—not a fact irrespective of the senses? Is this being misled? Or does Mr. Mill indeed suppose that it is by pure Logic,—by Logic only, and upon *a priori* principles, that the absent get to know that there is such a Church? or that it is by Logic, to any extent, that the spectator sees it? If we wish to call this sort of thing 'Logic,' we must at least say 'Material Logic' or 'Modified Logic' or the 'Logic of Common Life,' or do something to distinguish it from *a priori* Logic; and this Hamilton, it will be seen, allows us to do, if we choose to do so (Lecture iv. p. 231), but we must not call it either Logic or pure Logic any more than Formal Logic, unless we really are seeking 'to darken the subject.'

THE PROTEST.—SECOND STATEMENT OF IT.

The Rules for Contingent Thought said to be impossible.

Mr. Mill seems, however, rapidly to recover from this hallucination also, finding, it would appear, that there is nothing here for him to protest against, and confesses (p. 400) that what he really protests against is not, he now sees, against a distinction of name for the two totally different parts that there are in the Investigation of Truth, such a distinction of name being, he thinks, perfectly natural and important (pp. 400-403); but against Hamilton's saying that it is '*impossible*' to prescribe rules for the employment of Logical rules when we lay ourselves out to ascertain facts either in science or in common life, and against his saying that, apart from all the laws of Inference, there can be no such general theory of evidence for Life and Science,—no general precepts for going to work to ascertain facts by means of Logic. Now Hamilton has said no such thing as that here imputed to him. Hamilton has not said that this was impossible nor even difficult. He says exactly the reverse. He says it is not only possible, but a very easy thing, to set down all the requisite rules for the purpose, and that any one can do this for himself. 'These rules' (says Hamilton, as quoted by Mr. Mill, on the next page, 401) 'are few in number, and their applications simple and evident.' In short, as far as the possibility of constructing such rules is concerned, he could scarcely have said more on behalf of the rules for the ascertainment of consistency between the conclusion and the assumptions than he here says on behalf of the rules for the ascertainment of consistency between the assumptions and the facts. What is this, then, upon Mr. Mill's part, if it is not Pantomime?

THE PROTEST.—THIRD STATEMENT OF IT.

The Rules for Contingent Thought said to be few and easy.

Mr. Mill again shifts his ground. What he now protests against, he finds, is not Hamilton's asserting the impossibility or difficulty of drawing up general rules for the employment of the rules of Logic in the ascertainment of contingent facts, but Hamilton's saying that it is very easy to do this,—that these general rules for the application of Logic to Science and Common Life are simple, evident, and few,—the very opposite of the last protest; and it is thought that Mr. Mill does not say even this in jest.

If it is remembered that Logic is the Science of Coherent or Consistent Thought, we shall have no difficulty in seeing that there cannot be many rules necessary to point out to us how to employ it, except such as it can easily itself supply. This is evident in the case of Common Life and the affairs of Common Life. Surely Mr. Mill must admit that. Those who have Common Sense require very few hints as to how they ought to use their common sense. And it is the same with Logic, which is but the unfolding of common sense into its principles. It is the same with Logic, this Science of Coherent and Consistent Thought, in all its applications, whether it is applied to what is simple or what is difficult, and when it is applied to those more complicated affairs of Common Life, which 'task the very highest capacities of the human intellect,' or when it is applied to the no less complicated reasonings of scientific research. In all cases very little more is needed to instruct us how we are to employ our Logic or Coherent Thought, than experience, and what that Logic, or Coherent Thought, itself supplies. Hamilton says that any such rules or precepts are soon told, being simple, evident, and few. Mr. Mill, on the contrary, says that they are among the most complicated and inaccessible guides that minister to the human intellect in anything (p. 402).

Mr. Mill has several statements (p. 400, etc.), to the effect that over and above these two requirements for the affairs of Common Life or the study of the Sciences,—viz., over and above Experience and the Science of Coherent or Consistent Thought, there is something else more necessary and more difficult for the human intellect to deal with than either of these, and by which we are enabled to employ these to most effect. What that something is, is not the question. We know what it is. The question is, Are the rules connected with it simple, evident, and few, or are they the reverse? There cannot be much difficulty in determining this. I have said, we know what the branch of knowledge is. It is not experience. If it were, Mr. Mill would have called it so. He would not have called it a sort of Logic. And it is not Coherent or Consistent Thought; for that is the Logic which he so often tells us his is not. So that when we take Experience and Coherent Thought out of the Investigation of Truth, what remains is what Mr. Mill speaks of,—all that is employed in the Investigation of Truth except Experience and Coherent Thought. Is it necessary to say that there is very little left? This residue is treated of by Hamilton in a sort of appendix as Accidents of Logic or Modified Logic. Mr. Mill speaks of it (p. 400) by a number of names not very intelligible as he gives them, nor easy to translate without betraying his badinage; such as rules applicable to incoherent or inconsistent Thought, —to the Thought which is not treated of in Logic; a general theory of assumptions and premisses; a general theory of evidence for determining assumptions and premisses; rules for employing the rules of Coherent or Consistent Thought; the Philosophy of Incoherent Thinking (all in p. 400); the Science of mental powers (p. 402). Of all these modes of expression the most intelligible, and the only one that comes near the truth, is that in which he seems to describe the subject in question as rules for employing the rules of coherent and consistent Thought, *i.e.*, as rules for the Accidents or Contingencies of Coherent Thought; his expressions for which are 'rules for the study of nature' by means of Logic, and 'rules applicable to thought generally, abstractedly from particular matter' (p. 400). But all that such expressions mean, or can mean, is that these Rules are Logic (the Science of Coherent Thought) employed to teach us how to employ itself; just as we should express the same thing by saying that common sense teaches us how to employ common sense. What the reader will see at once is that if there is anything more than, or different from, Logic employed to teach us how to employ Logic, it would be simply absurd to call that, whatever it is, by the name of the

Science it teaches us to employ, as Mr. Mill so often playfully affects to do; but the reader will also clearly see at once, which is the main point just now before us, that Hamilton and Bacon are right in holding that any such extra-logical knowledge (any knowledge not either Coherent Thought now in action, nor Experience, *i.e.*, records of past Coherent Thought) is extremely limited, evident, and uncomplicated. Common Sense itself, without much aid from any rules except its own, teaches us how to employ common sense; and, in the same way, Logic, which is in fact but the same thing, teaches us also without much aid except from itself, how, with most effect, to employ Logic. There is no impartial reader who will fail to see at once that it is purely *pour rire* that Mr. Mill denies this, and affects to regard the complicated relations of a subject as rendering the rules complicated by which we judge of these relations. Mr. Mill, we have seen, confines the name of Big Logic or Large Logic to the mere art of employing the rules of Logic with most effect in the affairs of common Life, and in the Study of the Sciences,—to the mere art of employing these rules of Logic in questions of Similarity and Difference, of Chance, Induction, and Analogy, which Mr. Mill regards not unjustly as the ordinary materials of *a posteriori* evidence, and these rules for this employment of Logic, in these probabilities of Analogy, Induction, and Chance, are what Mr. Mill insists upon as something extremely complicated, extensive, and obscure, as much so in fact as the probabilities themselves,—as what he himself has found so, and as what are, he thinks, manifestly so in Herschel's and Whewell's splendid statements of what these rules and precepts are. How is it possible to suppose Mr. Mill serious in all this? He seems, it is true, to have some crochety notions about the Philosophy of Probabilities, which he calls the 'Theory of Evidence,' but which is in reality the mere study of facts either in the world or in the Sciences, imagining apparently that because we apply Logic, the Science of coherent Thought, to these Probabilities, they are themselves, in consequence, a sort of Logic. But why should Mr. Mill's friends require us to suppose that the rules employed in this Philosophy of Probabilities,—in this Philosophy of Chance, Induction, and Analogy, present to Mr. Mill a complication and obscurity which they present to no one else? especially when he himself reminds us (p. 401) out of Hamilton, of the fact that Lord Bacon considered that these rules were but the dictates of common sense, *i.e.*, of the simplest kind of Logic, and were so uncomplicated and so clear as to admit of being used, even by the most ordinary capacities, in the study of the physical sciences, bringing these sciences down immediately to the level and research of these capacities. Are we to suppose Mr. Mill to hold that 'a System' of Rules, both complicated and obscure, could render clear and uncomplicated any physical Science they were employed in? Or are we to regard him as here making war upon Lord Bacon as well as upon Hamilton? Or even supposing the rules for the use of Logic not to be simple, evident, and few, with what purpose are we to suppose Mr. Mill giving us this quotation from Hamilton about Lord Bacon, if we are here to consider him in earnest when he gave it? It asserts exactly the opposite of what Mr. Mill asserts.

THE PROTEST.—FOURTH AND FINAL STATEMENT OF IT.

The Rules for Contingent Thought said to be unnecessary.

A final rectification of his protest, however, takes place at p. 404. All he finds at last that he has to protest against is Hamilton's having considered that the precepts directing us how we may most successfully employ the precepts of Logic, and utilize our knowledge of those *a priori* Laws in Logic upon which the precepts of Logic are founded, *need not be studied* with special reference to scientific research, and to the Probabilities which, either in the form of Chance, or Induction, or Analogy, scientific research presents us with. I accept this final statement of Mr. Mill's oft-attempted Protest against our Logic and our Definition of it, and propose to remodel my reply accordingly. He has made several attempts to express this wrapped-up Protest of his instincts, but on each occasion, just when the puzzled reader fancied that he had at last arrived at something clear, comes an explanation of the Protest,—of what he really means by it,—which throws all back into darkness. We have our critic, however, tied to the present explanation of what it is he wants to protest against. It is the last. Therefore, as far as this case is concerned, Mr. Mill's rare power of darkening his subject is at an end. All then that we now find him at last and really protesting against is what I have just stated, viz., Hamilton's inculcating that when we begin our physical or metaphysical studies, *we need not* occupy ourselves with rules for using the rules of Logic; for discovering, for instance, the premisses or warranted assumptions, 'abstractedly from particular matter,' in a case of Chance, or of Induction, or of Analogy. This is (we are told) here the head and front of his offending. That the experience of others in each Science will sufficiently point out to us any rules of this kind that may be necessary, without a special study of them, Mr. Mill seems to admit. That *general* rules for the exercise of our Logical Knowledge and applicable indiscriminately to all the sciences need not be thought of, is the alleged assertion of Hamilton's which Mr. Mill protests against. It is absolutely necessary that the reader should grasp this distinction if he desires to understand what Mr. Mill here says. First, the rules of Logic as well as its principles must be studied, or at least carefully conformed to. All are agreed about that. Secondly, When we enter upon any particular science we must examine how others have set about employing these rules of Logic upon the matter of that science, so that our Logic may become 'the Logic of this or that particular Science.' This also all are agreed about, and that it is time enough to attend to this point in the case of each science when we are taking up that science. It does not appear that Mr. Mill finds any difference between himself and Hamilton upon either of these points. The point now before us is entirely distinct from both of them. It merely concerns the *abstract* rules of this latter kind, the rules for employing the rules of Logic which apply equally to *all* the Sciences. For instance, Analogy applies to all the Sciences. Induction also and Chance, which are but forms of Analogy, apply to all. Geometry applies to the physical sciences only. There are precepts connected with these four modes of employing the rules of Logic, chiefly precepts of Experience. Mr. Mill affects to think that Hamilton says these precepts need not be thought of,—need not be studied; that the study of the Inference alone (of the rules of Logic alone) will suffice to suggest these to us. This supposed statement of Hamilton's is what Mr. Mill now protests against. He, one after another, tacitly or expressly abandons all his other protests, or rather all the other statements of his Protest. He no longer protests against our holding that a Necessary Science has Truth, and the attainment of Truth as its sole aim. He no longer protests against our holding that a rightly framed or valid inference can be drawn from false premisses as well as from true ones. He no longer protests against the notion of Truth forcing its way into Gulliver's Travels and Baron Münchausen, without this rendering it necessary that the premisses should be true. He no longer protests against our disinclination to admit the Accidents of Thought (its contingent forms) into an *a priori* Science, nor against our wish to distinguish what is *a priori* from what is not by a separate name. He no longer protests against Hamilton's saying, what Hamilton never said, that it was *impossible* for us to frame rules for the more effective employment of the maxims of Logic in the affairs of Life or Science, nor against Hamilton's saying what Hamilton certainly did say, that it was *very easy* to do this,—very easy to frame such rules. Mr. Mill abandons all these statements of his Protest, or all these protests, one after the other. His sole Protest now is against Hamilton's not having given us rules enough of this kind, nor indeed any such rules at all, and against Hamilton's having even gone so far as to say that no such rules respecting the rules of Logic need be taught or need be studied (pp. 404, 405). 'It is indispensable,'—quoth Jack with his axe, ready to fall upon what seems in the haze to be a Giant's neck, and with his eyes flashing in the full climax of melodramatic fury, while with bated breath we listen for the last dread words of the doughty little Champion,—'It is indispensable that MY book on the use of Logic should be read as well as Sir W. Hamilton's on Logic itself.' [The axe falls amid loud applause, and what seems to be a Giant's head is held up in triumph by the hair, and flung with all due scorn into a remote corner of the stage.] 'I do not deny,'—continues our Logical Jack with much animation,—'I do not deny the scientific 'convenience of studying, at one time, the mode of employing 'Logic, and Logic itself at another time, nor that of teaching Logic 'itself, before you teach people how to use it. There is much advan'tage in doing so. But even if you do not do this,—even if you teach 'our young men first the rules for using Logic before you teach 'them what it is that they are to use,—you ought at least finally 'to teach them what this is that they are to use, and "to display to 'them distinctly" that the one is not the other; that the mode of 'employing a thing is bigger, more extensive, larger than the thing 'itself; that the Rules which teach the use of other rules are, as it 'were, outside those they teach the use of, and so contain them in 'a manner, and ought therefore to be called the Big Rules or Large 'Rules always, and the others, *e contra*, the Little Rules or the Small 'Rules; but, as I say, you had better teach the young men the

'Little Rules before their ideas have become too confused by the 'Big Rules to understand these Little ones. Sooner or later, how'ever, it is indispensable that MY SYSTEM should be read as well as 'Sir W. Hamilton's Logic (*ibid.*). You will never get on without it. 'It is indispensable that the contingent element of the Inference 'should be studied in addition to the *a priori* element of it,—that 'rules should be compiled like mine respecting the Accidents of 'Thought,—respecting what is not *a priori* in the Investigation of 'Truth,—rules by which we may most effectually employ the *a* '*priori* principles which are employed in that Investigation. It is 'indispensable, in short, that you should buy my book as well as 'Sir W. Hamilton's.' (The curtain falls amidst loud and prolonged applause.)

REPLY TO THE PROTEST.

We are told that in all this Mr. Mill is serious. Now, if so, it might be enough here to reply with Bacon, to this very meagre result of so much braggadocio, that he who has not the common sense to see how he is to use his common sense in scientific research (and Logic, as I have said, is but common sense analysed into its elements) has not probably much common sense to use, and had better perhaps leave scientific research to others. But instead of discussing this, or the manifold defects and grave fallacies of Mr. Mill's 'System' for the employment of Logic, I shall merely draw the attention of those Critics who suppose him serious, to the fact that everything imputed to Hamilton in this Protest by Mr. Mill is false, and is known by Mr. Mill and by everybody to be false. It is not true that Hamilton says no useful abstract precepts can be given as to the best steps to be taken to employ Logic to greatest advantage, even in the calculations of Chance, Induction, and Analogy. It is not true that Hamilton did not give abstract rules of this description in his Lecture Room to the Students of Edinburgh. It is not true that he has not left posterity abstract precepts to this effect. It is not true that these precepts for the advantageous employment of Logic with the Accidents of Thought are in any respect vague or insufficient. They occupy nine splendid Lectures—150 octavo pages,—the fullest and concisest Treatise that we possess upon the subject, and such as can seem vague and indefinite to no one except to those who are imperfectly acquainted with the rules of Logic, which it assumes we already know, and which it merely helps us to employ when we need to employ them in combination with the disconnected and the incoherent accidents of Thought. Let Mr. Mill's friends say, for instance, in what single respect this Treatise does not in clearness and accuracy far surpass that of Mr. Mill, even upon the latter's favourite subject of Induction. Finally, it is not true that Hamilton refuses to call this study, or rather these few and easy rules and classifications, a sort of Logic. He does so. He does so out of consideration to those who, like Mr. Mill, had been accustomed to this blundering terminology, and even suggests that we should distinguish it by the epithet 'Concrete,' 'Modified,' or some other such; the very toleration which Mr. Mill takes up pages in complaining that Hamilton does not afford him for his equivocal doctrine of Irratiocinative or isolated, *i.e.*, contingent and incoherent, thought. But while Hamilton speaks of a sort of Logic which is not *purely* the Logic of coherent Thought, but of this combined with those empiric accidents of Thought which are naturally incoherent and disconnected with one another, he is very careful (Lect. iii. pp. 60-63; iv. p. 60) to give no pretext whatever for our misapplying this name of Modified Logic to either Coherent Thought *by itself*, which is the misapplication Mr. Mill seems secretly to aim at, or to Incoherent Thought *by itself*, which is the misapplication Mr. Mill generally and professedly adopts. Are we to be told that Mr. Mill did not know of this concession upon Hamilton's part which I have now described? Let those, who seek even here to make us believe him serious, look at page 401, where Mr. Mill confesses, in his own sly way, that he knew all about it.

I subjoin the following brief extracts from Hamilton (omitted by Mr. Mill) in proof of what I have above stated:—'Pure Logic 'considers Thought Proper simply and in itself, and apart from the 'various circumstances by which it may be affected in its actual 'application. . . . Now there may be conceived a science which 'considers thought not merely as determined by its necessary and 'universal Laws, but as contingently affected by the empirical 'conditions under which thought is actually exerted. . . . This 'Science is Modified or Concrete Logic' (iii. 60). 'It can be ques'tioned whether Modified or Concrete Logic be entitled to the 'dignity of an essential part of Logic in general, far less of a co'ordinate species as opposed to Pure or Abstract Logic (p. 62). 'There is thus in truth only one Logic, that is Pure or Abstract

'Logic. But while this I think must be admitted in speculative 'rigour, still, as all sciences are only organized for human ends, 'and as a general consideration of the modifying circumstances 'which affect the Abstract Laws of Thought in their actual mani- 'festations is of great practical utility, I trust that I shall not be 'regarded as deforming the simplicity of the Science, if I follow 'the example of most modern Logicians, and add (be it under pro- 'test) to Pure or Abstract Logic a Part or an Appendix, under the 'name of Modified Logic. In distributing the Science, therefore, 'into these two principal heads, you will always, I request, keep 'steadily in mind that, in strict propriety, Pure Logic is the only 'Science of Logic, Modified Logic being only a scientific accident' (p. 63), *i.e.*, the science of combining the incoherent and disconnected accidents of thought for the use of Logic or Coherent Thinking.

Having thus pursued Mr. Mill's protest against Hamilton from bush to bush into its last hiding-place, and seen what it amounts to, we must now return a little upon our steps, and advert to a few of the other empty and absurd censures 'sown, crowning, and crowned' throughout this chapter. I number each sowing.

Is Logic part of Induction or Induction part of Logic?

1. We have seen that Hamilton so far humours the prejudices of those who *will* talk of Logic without understanding it, that he speaks of Chance, Induction, Analogy, and all other forms of Probability, as constituting a part of Logic, although in all the contents peculiar to them they are notoriously only accidents, and even speaks of a Treatise on them as constituting a sort of Logic under the name of 'Modified Logic.' Thus the calculation of Chances, when it has a syllogism, is Logic, in this foolish phraseology. Induction, when it has a syllogism, is Logic. Analogy, when it has a syllogism, is Logic. The use of our Senses, when it has a syllogism, is Logic. The real state of the case, however, is not that these things are then Logics, nor a Logic, but that we could not employ any of them without Logic. Logic is *inferring* anything *consistently* and *coherently* from any premisses whatever. We could not calculate Chances without doing this, nor frame an Analogy nor an Induction without doing it, nor use our eyes without doing it, nor, in fact, employ our understanding in any way without doing it. But if we seek to be accurate we must not call using

our eyes Logic, nor Chance Logic, nor Induction nor Analogy Logic. They involve Logic; because every thing involves Logic that involves thinking. They *belong* so far to Logic that we cannot do anything with reference to any of them without Logic. But all this does not make them Logic. We thence see that they are only accidents of Logic, or modes of employing Logic, not Logic itself; and that it is even going very far to call them, as Hamilton indulgently does, 'Modified Logic' (iv. 63). Induction cannot make a single step without the aid of Logic. Is Induction to be therefore called a part or element of Logic? This is what Hamilton has done out of sheer indulgence to the prejudices of the age; although Mr. Mill asserts that he has not done it. But as Hamilton says, let the concession not mislead us. It is in a very imperfect sense of the word 'part,' that Induction is part of Logic. This, however, does not satisfy Mr. Mill. He wants Logic to be part of Induction, not Induction part of Logic. He owns that Induction cannot make a single step without the aid of Logic, but thinks that on this account Logic ought to be regarded as part of that which cannot exist without its aid,—as part of the art of Induction rather than the art of Induction as part of Logic, and that the art of calculating Chances is rather that of which Logic is part, than that which is a part of Logic; and the same of Analogy. But does he not see that this is precisely the same frivolous question as though it were asked, whether the window is a portion of the thing called glass, or glass a portion of the thing called the window? or, whether Politics are a portion of the thing called Thought, or Thought a portion of the thing called Politics? Are we to suppose Mr. Mill not to discern that it is because Induction is an accident of Logic, and only to that extent, and in that sense, a portion of it, that Logic can be said to enter into (or be part of) an Induction, and that we need have no longer any doubt as to how the matter stands, when we reflect that there can be no Induction without Logic (*i.e.*, without a consistent inference), although there can be Logic without Induction. The Part is that which is not so extensive as the Whole. 'I leave this,'—as Mr. Mill says when he thinks he has discovered a new idea,—'I leave this for the consideration of Philosophers' (p. 394). Induction is only one application of Logic. The calculation of Chances is, Mr. Mill admits, another. Analogy is another; and there are other kinds of evidence, all of them applications of Logic. But the Science of Logic is not to be called part of Analogy, nor yet part of the Calculation of Chances, although neither of these can take place without it. No more is it part of an Induction. It is clear in each of these cases which is the more extensive in its operation or its import; and that which is so, is not the one which can, if either can, be regarded as a part of the other.

Is Logic more limited than Induction?

2. This brings us to Mr. Mill's second question, Is Logic more limited in its operation than Induction, or Induction than Logic? Which is bigger than the other—larger—more comprehensive? If either is part of the other, the answer is an easy one. The Whole, of course, is larger than its Part. But if neither is Part of the other, let us see how the matter then stands, and for convenience, as well as out of compliment to Mr. Mill, let us speak of them both as Arts. It will be admitted that that Art whose application is more extensive than another is the more extensive Art, the other being the more limited one. Now that Logic exists wherever Induction does, Mr. Mill freely admits, as will presently appear. There can be no Induction without an Inference; but Inference is Logic. And that Induction, even according to him, is not everything to which Logic is applied,—is not, for instance, the calculation of Chances, nor yet exactly the same thing as Analogy, nor the use of one's Senses,—is obvious from Mr. Mill's different treatment of these subjects as modes of employing the Inference. The stern necessity of all this is that Mr. Mill admits Logic to be more extensive than either the calculation of Chances by itself, or Induction by itself, or Analogy by itself, or than the use alone of our Senses. What necessarily applies to every one of these is more extensive than each of them by itself is. But where does Mr. Mill admit that there can be no Induction without Logic? He admits that there can be no accurate Induction without 'clear thinking,' and all the 'conditions of consistency,'—without something to prevent 'such mistakes as render our thoughts inconsistent with themselves and with one another,'—without, in fact, that Art which is 'necessary to all accurate thought;' and he admits that it is Logic which effects all this (see from p. 402 to p. 405). To speak of Logic then as more limited in its operation than that Induction which cannot exist without it, or to speak of it as only of the same extent as Induction when Logic (or consistent Thought) is quite as essential to the calculation of Chances, to Analogy, and to the use

of our Senses, as it is to Induction, is such palpable nonsense, that I conjure those to look carefully into this point who are not yet convinced that Mr. Mill was not in earnest when he wrote his book, and to take special note of his ridiculous struggles in the last few pages of this chapter, to get shallow readers to call consistent or coherent Thinking 'The little Logic,' and to call that which is not consistent or coherent Thinking, 'the Bigger or Larger Logic.' They will not need to read another page.

What is the proper Science of contingent Thought?

3. When pleading that the Evidence of the senses, as well as Probable Evidence or Conjecture (such as Chance, Induction, and Analogy) should have the same name as the *a priori* process (Logic), and be regarded as a portion of that Science, Mr. Mill asks with the usual *naïveté*, For if you do not allow the rules of Probable Evidence, and of the Evidence of the Senses, and all the other rules and forms for the development and use of Logic, to belong to Logic, to what other Science or branch of study do all these rules and forms belong? There is no other Science that professes to direct the Intellect (pp. 400, 401). The obvious answer is that even if there were no other Science in which to include these contingent rules for employing the rules of Logic, an *a priori* Science would be a very unsuitable one to make use of for that purpose. 'The bare idea' of wishing to call these *a posteriori* rules part of an *a priori* Science, 'is absurd upon the face of it.' But see all the other incongruities of the question here proposed. Why should all these rules require to belong to any single Science? Is it not quite enough that they should stand by themselves, as Arts, which Mr. Mill seems to consider them,—the Art of calculating Chances, the Art of Indnction, the Art of Analogy, the Art of seeing, etc.? not that one discerns much of an Art in any of them until the Inferring process (Logic) is introduced into them. Or if they must belong to some single Science, why not select an *a posteriori* one, such as the Doctrine of Probabilities, to which people commonly assign them, or Mr. Mill's own curious little Science of 'Irratiocination' (see Title-page of his 'System,' *et alibi*), which seems to have been expressly invented for them, or, at the very most, why not leave them as Hamilton has placed them in an Appendix to the *a priori* Science of Thought? why seek to embody and confound them with what is *a priori?* A queerer incongruity,

however, remains behind. How does it happen that Mr. Mill seeks to include all these contingent matters in this *a priori* Science Logic, when he has been occupying so much space in seeking to convince us that they are themselves the Science in which Logic is included, and of which Logic is only a very small part? If it is a part of them, how can they be included in it? and if these are not all frivolous jests upon Mr. Mill's part about Induction-Logic, Chance-Logic, Analogy-Logic, etc., how do his friends propose to reconcile these things with facts?

Bacon's alleged Problem.

4. When Mr. Mill affects to upbraid Hamilton with having said that it was impossible to draw up in any useful form, for scientific research, those rules of common sense which are but accidents to that which common sense has *a priori* in it, he proceeds to justify his reproof by informing us that the drawing up of such a system of accidents was 'the problem which Bacon set before him, and led the way towards resolving' (p. 400). Now every one knows that this is pure fiction. Every one knows that Bacon set no such problem before him, and led the way towards resolving nothing of the kind. He only left us a few instances of the common sense principles he wished Scientific inquirers to act upon, whether developed into Logic or not. *All* he sought to do in Physical Research was to get people to use their senses and their common sense, but not to tell them, as Mr. Mill supposes, how these were to be used. Those who did not know how to use these, without written rules, were certainly not those for whom Bacon wrote. It is unreasonable to suppose that Mr. Mill is ignorant of this. He is only Giant-killing.

Bacon's alleged ignorance of Physical Science.

5. A further remark of Mr. Mill's on Bacon is an amusing instance of the way in which we constantly find that when another Giant is introduced to overthrow Hamilton, the second Giant turns out to be an old friend of Hamilton's, entirely disqualified for overthrowing him, and whom, consequently, it becomes necessary to overthrow also. Mr. Mill has no sooner brought Bacon in by the head and shoulders than he finds great fault with Hamilton for saying, with Bacon, that to observe and class the phenomena of Physical Science can be done as well by a very inferior order of

Intellect as by the highest,—that what this mainly requires is resolute industry combined with no other intellectual prowess than Common Sense. To Mr. Mill's quotation from Hamilton (at p. 401) we may add the following from both Hamilton and Bacon. Hamilton writes (*Disc.*, 703): 'The Natural Sciences are essentially easy; 'requiring comparatively little talent for their promotion, and only 'the most ordinary capacity for their acquisition;' and then quotes Bacon (*N. O.* i. 122): 'Nostra via inveniendi scientias 'exæquat fere ingenia et non multum excellentiæ eorum relinquit. . . . Hæc nostra (ut sæpe diximus) felicitatis cujusdam sunt potius quam facultatis et potius temporis partus quam ingenii.' To which we may add from the 'Filum Labyrinthi de Motu:' 'Nostra autem talia sunt, quæ hominum ingenia et facultates fere 'æquant.' In Jack's savage onslaught upon Hamilton, in this place, he demolishes the very Giant he himself brought in to help him, merely because the latter agrees with Hamilton; and this Mr. Mill does apparently unconscious of what he is doing. He says that this frequent remark of Bacon's quoted by Hamilton, and familiar to every student in Philosophy, about those rules of Common Sense which we call Induction, being so easy an affair as to be work for minds of a very low calibre, 'proves' the author of it to be destitute of the preliminary knowledge required for making any proficiency in the use of this Induction (p. 402). 'Every one who has obtained any knowledge of the Physical Sciences from really scientific study,' knows, according to Mr. Mill, that Bacon is wrong when he says this; and 'a thinker' (as here Bacon), 'however 'able, who is too little acquainted with the processes actually fol- 'lowed in the investigation of objective truth to be aware of this 'fact, is entitled to no authority' (*ibid.*). It will easily be believed that the optical illusion of an overthrow here produced, leaves both Giants erect and scathless; but Mr. Mill's attempt here and elsewhere to disparage Bacon's Rules for the employment of Logic in cases of Induction, in order to exalt his own erring and meagre chapters upon Physical laws, is what we should not have expected from Mr. Mill even in jest, and what, until they have examined what he has written, none even of his opponents will believe.

Mr. Mill compares himself to Hamilton in Physical Science.

6. While Mr. Mill is finding fault with Hamilton and Bacon for saying that cognitions and generalizations,—the knowing some

things *in, through*, and *under* others (that truly profound and deep-seeing phrase so hateful to Mr. Mill)—is as easy a matter in Science as in Common Life, if we only have the time and industry for it, he startles us not a little by saying, *à propos des bottes*, that he thinks we must admit that, in Physical Science at least, he (Mr. Mill) is a more accomplished man than Sir W. Hamilton; and his Critics think him serious here also. Yet see how the facts stand. Mr. Mill is very conscious, he tells us, that Hamilton's mind was far superior to his own (p. 548), and Hamilton was, we all know, a good German scholar, which Mr. Mill does not pretend to be, quite as much acquainted, at the very least, with the Mathematics as Mr. Mill himself is, and, in Greek and Latin Literature, graduated at Oxford in the very highest honours, while Mr. Mill's knowledge on these subjects does not exceed that of a schoolboy, if it even reaches it. Mr. Mill is aware of all that, but thinks that Hamilton must be admitted to be his inferior in information connected with the Physical Sciences (p. 402, *et passim*). Now there is no one, even of Mr. Mill's admirers, acquainted with the facts upon this subject, who will not say at once that their Champion is 'mistaken' in this. Mr. Mill himself admits that, for all he knows to the contrary, Hamilton stored 'his vast memory' with the facts of Physical Science to far more than the ordinary extent—went through, in short, the whole Physical Curriculum (p. 551), and fully admits that, besides all this, there was one of these Physical Sciences in which Hamilton had made himself a master, viz., Physiology, upon which Science, according to Mr. Mill, Hamilton's 'mental powers were really employed.' Does Mr. Mill mean, perhaps, more than Mr. Mill's own mental powers were ever 'really' employed upon it, or upon any one other Physical Science? (*ibid.*) But according to Mr. Mill's view of the Irratiocinative or Contingent 'Logic,' proficiency in a single Physical Science exhibits as much of the Inductive or Irratiocinative Process as proficiency in all of them would do; for Mr. Mill scorns the idea of this process being different in different Sciences (p. 400). So that Hamilton's study of Physiology alone (to say nothing of the 'mental powers really employed' upon Metaphysics) must have, on Mr. Mill's own showing, given Hamilton all the preliminary knowledge and all the Induction-mysteries in which Mr. Mill asks us to think Hamilton somewhat his inferior.

So far we have not so very strong a case against Hamilton.

Of course we speak of Physical Science only. In nothing else does Mr. Mill pretend to be superior. But in Physical Science the case is, so far, not a strong one. We do not know that Mr. Mill's mental powers have ever been really employed upon any *one* of the Physical Sciences. We know pretty well that they have not. We do not know that he has gone through a Curriculum of them even outside the precincts of a University. We are nearly certain that he has not. We know that within a University he certainly has not. We do not know that his Physical Knowledge extends beyond the illustrations which he has copied out of Whewell and other Physical Writers into his 'System' of Irratiocinative Logic. We have very good evidence that it does not. So far then it seems, as I say, that, even taking matters at Mr. Mill's own estimate, he can really hardly expect us to think of him as Hamilton's superior in the Physical Sciences, but very much the reverse.

Let us hear, however, upon what special grounds Mr. Mill makes his demand. He mentions as these grounds four circumstances which he considers 'signs of Sir W. Hamilton's want of familiarity with the physical sciences,' to which signs one other may be added, calculated to have much weight with Mr. Mill, whether he is to be regarded as in jest or in earnest in this curious imputation against Hamilton. These signs, he says, of Hamilton's inferiority to him, 'meet us in every corner' of Hamilton's works.

(*a*.) One main sign Mr. Mill frankly states, is Hamilton's having agreed with Bacon in thinking that the Rules for the employment of Logic in the Inductive Sciences are mere common-sense maxims, and soon told, and that any other hints that are necessary for a sensible man on this point are soon told also (p. 401). But since Hamilton and Bacon here share precisely the same treatment at Mr. Mill's hands, we may safely leave them to take care of one another.

(*b*.) The next assignable ground for Mr. Mill's thinking himself Hamilton's superior in Physical Science, and for our being expected to share Mr. Mill's conviction, is the almost total absence in Hamilton's writings of illustrations drawn from physical science and technically expressed. I acknowledge that Mr. Mill does not state this ground. It would have been an awkward one for him to state. I infer, however, that it is 'one of the signs' from the three facts—'that it meets us in every corner' of Hamilton's works; that such illustrations, on the contrary, frequently occur in Mr. Mill's writings; and thirdly, that they constitute the only evidence Mr. Mill has given us of his own alleged proficiency in anything like Physical Science at all. But the obvious answer is that a mere parade of technical language unnecessarily introduced into every page of a book, is so far from suggesting research, that it now-a-days strongly suggests the contrary.

(*c*.) Another of these signs of Mr. Mill's superiority (p. 402, note) which show themselves 'in every part of *the little* Sir W. Hamilton *says* concerning the Investigation of Nature,' is that Hamilton asserts 'an intrinsic difference' between Analogy and Induction, which one versed in Physics would not do. Mr. Mill is right. There is not much difference between these. The laws of Nature are all only, as Mr. Mill here insists, probable, and founded on mere Analogy. But where does Hamilton say anything different from this? Where does he say that there is much difference, if by 'intrinsic' we are to understand 'much'? Surely Mr. Mill does not suppose Hamilton to say that an Induction can give certainty? and if by 'intrinsic' we are to understand only real and distinguishable, what has Mr. Mill to complain of here in Hamilton? *Some* difference there is between Induction and Analogy. Mr. Mill will admit this. And all difference, even of degrees, is, as far as it goes, intrinsic. *One* is intrinsically different from *two;* and one anything from two anything. Perhaps, then, Hamilton is, after all, not, in either sense of Mr. Mill's epithet, so very far astray. For it is Mr. Mill's epithet. Hamilton does not say the difference here in question is 'intrinsic.' He neither uses that word, nor any word of similar import, nor, in fact, any epithet at all in speaking of the difference. He merely seeks to specify what the difference consists in; and with the exception of the interpolation 'intrinsic,' whatever it means, Mr. Mill just repeats here almost in Hamilton's own words what Hamilton says. Hamilton says (Lect. iv. pp. 173, 174, *et alibi*) as distinctly as Mr. Mill does in his note (pp. 402, 403), that neither Induction nor Analogy, nor any other calculation of Chances, yields anything but probability; and we know that there can be nothing but a homogeneous difference between one probability and another except in their degrees. Hamilton would have asked as freely as Mr. Mill would, whether it is by Analogy or by Induction that we infer the sun will rise to-morrow, and whether it is less certain that the sun will rise for us to-morrow than it is that fire could burn paper on the surface of the other planets. A little more familiarity with the subject would have shown Mr. Mill, and Mr. Mill's critics, that there is not even any room for dissension respecting the inferences from Analogy and Induction, and that any such supposed room would not, had it existed, have enabled him to appear in this place more conversant than Hamilton with the Physical Sciences. His anxiety that the reader should 'See' his System of non-ratiocinative Logic is intelligible enough.

(*d.*) One of our 'signs' of Mr. Mill's superiority in Physics is, that Hamilton does not understand what an induction is as well as Mr. Mill does; and that Hamilton mentions only two requirements for an induction (*ibid.*). Now, as to the first point, which is but begging the question, Hamilton will be found to know only too well for Mr. Mill's speculations what an induction is (see Discuss. pp. 156, 173; Lect. iii. p. 319, etc.; iv. 165, etc.); and as to the second point, Hamilton mentions four requirements (iv. 170) for an induction, instead of the two imputed to him by Mr. Mill, while Mr. Mill himself does not seem even to recognise two. It is scarcely necessary to admit the truth of what Mr. Mill here curiously enough obtrudes upon us, that his 'low reach of thought' on this point, as on every other, 'had never risen above Sir W. Hamilton's horizon!' It certainly had not. Hamilton's telescope swept his hemisphere for anything of that poor kind in vain. At least his pages record nothing.

(*e.*) The only two other 'signs' which Mr. Mill seems to have found worth mentioning, of Hamilton's inferiority to him in Physical Knowledge, are the *singular* view Hamilton takes of Analysis and Synthesis, and his not agreeing with—here called 'his incapacity for understanding'—what Whewell said of the pressure upon the fulcrum when the weights are balanced (p. 552, note). Oh that we could prevail upon those of Mr. Mill's admirers who suppose him in earnest, to attend to these two points; and not to say here, as they do of so much else in his book: 'We are sure he is in earnest, and sure he is right, but the point is too minute,—too frivolous— to occupy ourselves even for five minutes about it.' With regard to Analysis and Synthesis, the facts are as Mr. Mill states them (p. 552, note). Hamilton is writing on Psychological investigations only, not on Physical Science; and says that in the former 'the Analytic process is chronologically first in the order of knowledge' (iv. 7). He repeats this several times, as here mentioned by Mr. Mill. He 'imagines,' as Mr. Mill expresses it, that Synthesis always presupposes Analysis in such investigations, and that unless grounded on a previous Analysis, Synthesis can afford no knowledge. This is Mr. Mill's statement of what Hamilton says; and notwithstanding the word 'imagines,' Mr. Mill acknowledges, lower down in the note, that in this Hamilton is right. So far so good. But Hamilton, wishing to explain to his students the import of these two words in their Physical use, in order to make it thereby the clearer in their Metaphysical use, takes a case of Chemical Analysis and shows how the Synthetic process can be subsequently conducted. Mr. Mill says that the same statement as Hamilton made about the Logical Analysis is here repeated about the Physical,—that Hamilton considers the Analysis must also always precede in Physics as it does in Metaphysics, and that we never find in Nature a simple substance, even what we call so. Now, all this shall be either a malicious falsehood on Mr. Mill's part, or a piece of fun, just as Mr. Mill's friends like, or any intermediate thing they prefer to call it; but I must be permitted to say, as distinctly as words can say it, that it is entirely inconsistent with the facts. Hamilton does *not* say of Chemical what he says of Logical Analysis. He does *not* consider that the material Analysis is always chronologically the first operation. He does *not* consider, *nor* say, as Mr. Mill pretends he does, that simple substances are never found in Nature. Not one of these things does Hamilton here say, nor anywhere. There is not, therefore, even this sign of Hamilton's not being infinitely Mr. Mill's superior in Physics as well as Metaphysics. Nay. We have a strong sign of something very different. It has been already observed that our ignorance of what mistakes are possible in a Science, betrays our ignorance of that Science. Those who could imagine Mr. Mill, for instance, not to know that the Chemist can compose a substance which he has not first analysed, or not to know the difference between + and =, have, we are at once convinced, very little experience either of Chemistry or of Algebra. The fancy then that 'an eminent thinker,' as Mr. Mill tells us Hamilton was, laboured under the former of these misconceptions, is what never could have implanted itself in the head of any one who possessed the smallest familiarity even with the mere language of the Chemist. Mr. Mill's Physical 'subtlety' seems in this place to be entirely at fault, even in vindication of its own superiority, if he was not, as I suppose him to have been, sacrificing its reputation to the scenic interests of his Burlesque.

(*f.*) Then what did Whewell say which Hamilton did not agree with? Whewell, in his 'Thoughts on the Study of the Mathematics,' states it as an Axiom that 'the pressure on the fulcrum is equal to the sum of the weights.' Hamilton contradicts the statement. Hamilton says, 'It is not true. The pressure on the fulcrum is equal to the sum of the weights *plus* the weight of the lever' (see Disc. p. 324, or new edit., p. 328). Hamilton frankly admits immediately after that this could only have been an oversight upon Whewell's part, owning that he knew of no one better acquainted with such things than Whewell was, and that Whewell wrote this inadvertently. Now, what says Mr. Mill? He draws our attention to Hamilton's 'incapacity of understanding' that the pressure upon the fulcrum does not include the pressure of the lever, and, with an ingenuous silliness or *naïveté*, to be explained, I think, only upon my principle, observes that 'the incapacity of understanding' the law as here stated by Dr. Whewell is one of the signs of Sir W. Hamilton's want of familiarity with the physical sciences,—signs which meet us in every corner of his works, and which, in connexion with Mr. Mill's present claim, Mr. Mill leaves 'for the consideration of philosophers.' That Mr. Mill, when he wrote all this stuff, did not know how the facts stood in the 'argument respecting a principle of Mechanics,' 'connotes' such an utter incapacity on Mr. Mill's part of understanding anything at all, as hardly any of his friends will, I suspect, choose to attribute to him. They will find themselves necessarily thrown back upon the alternative of dishonesty or fun. Dishonesty! How can it be entertained one instant? But in whatever way this is decided, it does not appear that there is a single 'sign' of Hamilton's not being as vastly Mr. Mill's superior in Physical research as in everything else, all the 'signs' being the other way; and this is all that I had, at this point, undertaken to make clear.

The Probable said by Mr. Mill to embarrass the Logician.

7. When Mr. Mill is speaking of the probable or contingent truths which we get at by Analogy, Induction, and the Calculation of Chances (to all which he gives the singular appellation of 'Logic not Ratiocinative'), and of what he seems to regard as the

rather curious fact of its being possible for us to infer from objective truths which have been observed, that other objective truths are probable which have never been observed, 'This possibility,' adds Mr. Mill, 'is an eternal mystery and stumbling-block to the *a priori* Logic' (p. 404, *sub finem*). What can Mr. Mill mean by this? The Formal or *a priori* Logic could never have got on without the probable or contingent 'Logic.' It is, if there were nothing probable—nothing contingent—nothing but what was *a priori*,—nothing but what could not possibly have been otherwise than as we find it,—it is this that would indeed have been an eternal mystery and stumbling-block to Formal or *a priori* Logic. Or, equally awkward, imagine for a moment, if everything that was not *a priori might* be at any moment any one thing as well as another, and was not *likely* to be at any moment any one thing more than another (*i.e.*, had no probability connected with it), what a chaos would be the result! How could we live? How could we think? How could we see in anything what we might do? The Formal Logic would be stumbled and staggered then with a vengeance. It would in fact then be of no use. So far is the inductive probability which we now enjoy from being, as Mr. Mill affects to think, either a mystery or a stumbling-block to our *a priori* knowledge, that without this probability we could not get on at all. Are we to suppose that Mr. Mill labours under 'an incapacity of understanding' this? and an incapacity also of understanding that the probability which he draws out of the four-cornered Concept-bag (Exam., p. 399, and Part I. p. 89) in this place, is attended with no surprising feat of jugglery,—with nothing 'absurd upon the face of it,' as he pretends it is, but had been already slowly and openly placed in the bag by the synthetic action of our *a priori* knowledge?—and this is not to be called Giant-killing! What, then, is it? I nevertheless admit, that if I were asked for a sample of what I consider a genuine blunder upon Mr. Mill's part, I should be tempted to point to that now before us. He *may* have overlooked the fact that an induction only yields probability,—some appreciable degree of uncertainty, however small,—never under any circumstances anything more than probability. His having come to an opposite conclusion may, just possibly, have bewildered him and misled him, in his 'System,' into what he calls the great problem (*i.e.*, for him the great perplexity) of Induction, and, on the present occasion, into all these anties.

Truth, whether a posteriori *or* a priori, *said by Mr. Mill not to be made the aim of Logic.*

8. Everywhere throughout the last eight pages and a half of this chapter, and elsewhere, we find Jack assuming and endeavouring to impress upon our minds that his Giant does not look upon the attainment of Truth as the end at all of Logic or Coherent and Consistent Thought,—much less as the great and sole end of it; and that his Giant ascribes Logic and Coherent Thought to some very different purpose of the human mind. What Hamilton says upon this point is this :—'The end which all our Scientific efforts are exerted to accomplish, is Truth and Certainty' (Lect. iv. 61). Again: 'Truth and Certainty constitute the end of all our endeavours after knowledge, for only in the attainment of Truth and Certainty can we possibly attain to Knowledge or Science' (*ibid.* 63). Hamilton adverts, as Mr. Mill mentions (p. 365), to the 'countless multitudes' of *a priori* Truths opened up to us by Logic as constituting one of its great merits; and in order to facilitate the attainment of as many *a posteriori* Truths as possible, Logic undertakes, Hamilton tells us, 'to purge the understanding of those 'errors which lie in the confusion and perplexities of an inconse-'quent thinking' (iii. 37). Hamilton, therefore, considers that Truth of all kinds is peculiarly and emphatically the business of Logic,—of *a priori* or Pure Logic; for except nominally, there is no other. He there and thus states that the whole business of Logic is both, *first*, to develop *a priori* Truths, and *secondly*, to purify the understanding so as to enable us to attain conviction as to those which are *a posteriori*. It does not remove the necessity for conviction here as it does in the case of *a priori* Truths. It only supplies what convinces. It does not render *a posteriori* facts *a priori*. It cannot do that. We cannot ascertain by Logic whether the parsnips and other 'sown' things have their 'crowns' on (p. 351), or whether Notre Dame is still standing. Such facts we ascertain by inspection or report; not by Logic. By Logic we learn to use whatever we see or hear upon the subject. By Logic our Thinking is made correct, *i.e.*, coherent and consistent upon all subjects; and, according to the amount of this consistency in our Thoughts, we are able to see that our Thoughts consist, or do not consist, with what we assume as fact, or with what we know as *a priori*,—that, in other

words, what we ascertain to be probably or *a priori* true *is* probably or *a priori* true. Mr. Mill says that this is employing Logic in *something very different* from the ascertainment of probable Truth (p. 397, *init.*). It is only, he says, employing it in making us think coherently about the probability of things, but this does not enable us to discern their probability! Now here I maintain is something very distinctly stated by Mr. Mill, so obviously and entirely contrary to what is true, that no room is left for any reasonable person to doubt whether the denial it contains is in jest or is in earnest. What is it,—what can it possibly be to discern a probability, if it is not to think coherently and consistently about the probable thing, and about all connected with it that we hear or see? And this is, as Mr. Mill truly says, the only thing that Logic teaches. But even supposing it not an easy matter for minds of a certain stamp to see that it is utter nonsense, and utterly false to say that 'the only precepts for thinking with which Logic concerns itself are those which have some other purpose than the (*a priori*) conformity of our thoughts to the (*a posteriori*) fact' (pp. 397, 398), yet any one, I suppose, can see that it is so to say this of facts *a priori*. Any one can see the burlesque of saying, as Mr. Mill does, that the only precepts for thinking, with which Logic concerns itself, are those which have some other purpose than the *a priori* conformity of our thoughts to the *a priori* fact. In the case of all *a priori* facts and truths, we are dependent wholly upon Logic; we have nothing else to go upon; and these, as Hamilton says and Mr. Mill admits, are 'a countless multitude.' Or are we to suppose Mr. Mill to mean that 2 and 2 making 4 is not a Truth —that nothing *a priori* is so—that the way in which we may distinguish things *a priori* and necessary from things *a posteriori* and contingent is this: the latter are truths, the others not? Here then is the problem for the critics. Would Mr. Mill have said, otherwise than as a jest, that Logic does not propose to itself the ascertainment of *a priori* or demonstrative Truth, by means of coherent thinking, and the attainment of *a posteriori* or inductive and probable Truth by these same means of coherent or consistent thinking? Would Mr. Mill have said this otherwise than as a jest? I venture to say that, except in this fantastic character of Jack the Giant-killer, which Mr. Mill has here so resolutely assumed, he would never have written such a statement as that coherent thinking does not lead to truth, but has some other purpose; and that it is something quite different from coherent and consistent thinking that leads mankind to Truth.

Recapitulation.

We have then in this chapter three distinct portions :—

One portion of eighteen pages (from 373 to 391), denying the truth of each term of Hamilton's Definition of Logic, which is that now accepted by all Logicians.

Another portion of six pages (from 391 to 397), in which Mr. Mill undertakes to show that Hamilton's definition is unintelligible, in order (he ingenuously discloses to us, p. 396, *sub fin.*) to justify his utter disregard of Hamilton's statements when he undertakes to explain what Hamilton means,—and to prepare his reader for the further development of this novel principle in Exegetics.

And a third portion of eight pages, from 397 to the end of the Chapter, in which portion he undertakes to show that Logic,—the doctrine of Inference or Coherent Thought, with its rules and the Laws of Nature, upon which these rules are founded, is a useless and unimportant Branch of Knowledge, being of very small extent, and not having for its object the attainment of Truth.

I have now to show that Mr. Mill recants each of these statements, admitting that Hamilton's Definition of Logic is perfectly correct, that there is nothing whatever unintelligible about it, and that the science is not only useful and important, but of universal application, being essential to all correct thought. His recantation of the minor issues I have, for the most part, indicated as we proceeded.

1. Hamilton's Definition is that Logic is the Science of the (*a priori*) Laws of Thought as Thought, *i.e.*, that Logic or Inferring is always *a priori*, whether the inferred Truth is *a priori* or not,—that it is the branch of knowledge which exhibits the Laws of Nature,—the *a priori* Laws of pure Thinking, and also the human precepts or directions for conforming to these Laws when we draw inferences. Thus we see that, according to Hamilton, Logic does two things. It gives directions or precepts for valid or coherent thinking, and investigates the scientific grounds that exist for these directions, in the *a priori* Laws of Nature. That Mr. Mill really finds no fault with this Definition notwithstanding all he says against it, he himself admits several times :—'Thus Logic is the 'Art of Thinking, which means of correct Thinking, and the Science

'of the conditions of correct Thinking. This seems to me a suffi-'ciently accurate Definition of it' (p. 391). 'I therefore accept 'our author's second view' (there was no other) 'of the province of 'Logic, which makes it a collection of precepts or rules for Think-'ing, grounded on *a scientific investigation* of the requisites of valid 'thought. It is this doctrine which governs his treatment of the 'details of Logic' (p. 389). 'I conceive it to be true that Logic is 'not the theory of (invalid) Thought as Thought, but of valid 'Thought (as Thought); not of (incorrect) thinking but of correct 'thinking. . . . So far as it is a Science at all, it is a part or 'branch of Psychology' (as Trigonometry is part of Geometry); 'differing from it on the one hand as a Part differs from the Whole' (it is therefore a Science); 'and on the other, as an Art differs from 'a Science. Its theoretic grounds are wholly borrowed from Psy-'chology, and include *as much of that Science* as is required to 'justify the rules of the Art' (p. 388).

2. As to the six pages in which Mr. Mill tries, by the aid of the term 'Forms' and 'Forms of Forms,' and 'Forms of the Forms of Forms,' to throw everything into such confusion as shall warrant his saying that he labours under 'the incapacity of understanding' Hamilton's Definition, especially the expression 'Thought as Thought,' although it has been understood, and thoroughly understood, by multitudes of thinking men, even by young men scarcely yet out of their *teens* (p. 396, *sub fin.*)—as to these six pages of confusion and throwing back into darkness, we have Mr. Mill himself *more suo* stating twice over,—indeed more than twice,—that he understands the whole thing perfectly, and that any one may understand it,—that what he said was all fun. He does this when he assents, as cordially as he does, to the Definition in the passages quoted in the last paragraph. He could not assent to any proposition that he did not understand. He does it also quite as explicitly (p. 384) in these terms:—'We 'may understand Sir W. Hamilton to mean' (by that puzzling phrase 'Thought as Thought,' or 'The Form of Thought') 'that 'Logic is not concerned with the actual contents of our knowledge '—with the particular objects or truths, which we know—but only 'with our mode of knowing them; with what the mind does when 'it knows, or thinks, irrespectively of the particular things which 'it thinks about; with the theory of the act or fact of thinking, so 'far as that fact is the same in all our Thought, or can be reduced 'to universal principles' (pp. 384, 385). This is all a correct though

not very lucid statement of what Hamilton says, notwithstanding 'the Forms of the Forms of Forms.' It seems to be one of those sentences in Mr. Mill's book which try to be more philosophical than they can well manage.

3. As to the uselessness and unimportance of the Science by which we learn to draw a valid inference even from false premisses, and an *a priori* one even from premisses which are only probable and inductive, on which uselessness and unimportance Mr. Mill has bestowed the eight pages of what he calls 'triumphant animadversion' which close this chapter, he recants all this with an astute eagerness, a sort of vehemence in disguise, which lays bare before us his extreme unwillingness to be thought by any, except his mob, to have been serious when he wrote it. He tells us that he knows very well that Logic, the Logic defined by Hamilton, is both useful and important in the extreme, and that it is so on account of the fact, so often jocularly denied by Mr. Mill, of its having for its sole aim and object the attainment of Truth. 'The Logic called 'Formal *aims at removing one of the obstacles to the attainment of* '*Truth*, by preventing such mistakes as render our thoughts *in-*'*consistent* with themselves or with one another,' *i.e.*, by preventing incoherent Thinking (p. 402). Here then Truth is, he admits, the aim of Logic; and though he seems to say that we may get at Truth without coherent thinking, we must be indulgent and not suppose he means that. 'The purpose of them all (thinking ope-'rations) is to enable us to decide whether anything, and what, is 'proved *true*. Formal Logic *conduces to this end*, by enabling us to 'perceive either that the process which has been performed is one 'which could not possibly prove anything, or that it is one which 'will prove something to be true, unless the premisses happen to 'be false. This aid is *of the greatest importance*. . . . It is impor-'tant because *the end—the ascertainment of Truth*—is important' (p. 403). After some of his so-called 'triumphant animadversion' he writes thus:—'This by no means implies that Formal 'Logic is not of *very great* . . . *value*. On the contrary, I subscribe '*heartily* to ALL that is said of its *importance* by Sir W. Hamilton 'and Mr. Mansel. It is good to have our path clearly marked out, 'and a parapet put up at all the dangerous points' (*i.e.*, it is good to have coherent thoughts), 'whether the path leads us to the place 'we desire to reach, or to another place altogether,' *i.e.*, whether we are thinking of what is true or not (*ibid.*). After saying that Logic,

or the *a priori* Principles of investigation, can be best taught before the Principles of Probability and Induction, he observes:—'*The* '*greatest service* to be derived from it (Logic)—*that of keeping the* '*mind clear*—can be best rendered before a habit of confused think- 'ing has been acquired' (p. 404). He means perhaps such a habit as results from incoherent Thought, or what he calls Big Logic—Large Logic—being alone attended to. He says further of this Big or Irratiocinative Logic, as he calls the Science of Incoherent Thought (a curious science not mentioned by any other writer), that 'it can explain the function of the Ratiocinative process' (*i.e.*, of Logic or Coherent Thought) 'as an instrument of the human in- 'tellect *in the discovery of Truth*' (p. 405). 'Such account as can 'be given of the process (viz., coherent or consistent Thinking) by 'looking at it solely by itself, *however useful and even necessary to* '*accurate thought*, does not dispense with, but points out in a more 'emphatic manner the need of, the more comprehensive Logic' (the Logic of Incoherent, disconnected, or contingent Thought) 'of which 'it *should* form a part, and which alone can give a meaning, or a 'reason of existence, to the Logic called Formal' (the Science of Coherent or Consistent Thought), 'or to the reasoning process' (the Coherent Thought) 'itself' (p. 405).

No one who does not carefully reflect upon each expression of this last passage will have any conception of the nonsense it contains. It is an excellent illustration of that curious process often, and, as far as I know, solely resorted to by Mr. Mill, adverted to in Part I. p. 62, and for which I there propose a name. Besides carefully and conscientiously retracting the imputation that Logic is useless and unimportant and limited, admitting even that it exists as extensively as accurate Thought,—which is all that Hamilton ever intended to say of its extent,—the passage proceeds, on all other points, in the merriest mood possible, insisting among other things that Coherent Thought is a less extensive science than Incoherent Thought; in which statement there really is some truth. It insists also that Logic—Hamilton's Logic, the Logic of all of us—is the Science ONLY of Coherent Thought—of nothing else more interesting or more important than Consistent or Coherent Thought, which Coherent Thought we have seen Hamilton and Mansel giving themselves great pains to make do duty instead of the other kind of Thought—instead of that which is not Coherent (p. 399); just as we have also seen that Logic—Hamilton's

Logic—ONLY concerns itself with the conditions of Coherence and Consistency in our Thoughts (p. 404), ONLY aims at removing incoherence of Thought from our investigations (pp. 402, 403), which incoherence, we are there told, is sometimes found to be *rather* an obstacle in the ascertainment of Truth. This closing passage of the Chapter also bids us be of good cheer, assuring us that what the Logic of Coherent Thought cannot do, the Logic of all other Thought effects at once. This Logic of Thought that is not Coherent can explain the function (droll expression!) of the Coherent Process, as an instrument of the human intellect in the discernment of Truth, and can assign it its true place among the other instruments, meaning probably the eye, ear, and hand, as well as this Thought itself which does not cohere, and which is the subject of this other 'Logic.' This other 'Logic' therefore—this Logic of Incoherence and Inconsistency—is alone competent to furnish a philosophical theory (oh, those philosophical theories!) of Coherent Thought. The Science of Incoherent Thought can do all this,—can furnish forth a theory of Coherent Thought. We are further told that the more we look at the process of Consistent or Coherent Thought, the more need we shall experience of the more comprehensive Science—the Inconsistent or Incoherent process; and, what is also curious, the more we shall feel the necessity of combining the two into one great 'System,' inasmuch as, without this union, we cannot see the meaning of Coherent Thought nor the reason of its existence;—much less of a Science for it. I challenge Mr. Mill's Critics and admirers to account for such a mass of waggery and nonsense as this (and it is but a sample of what may be found in every page in his book) upon any other hypothesis than mine,—that Mr. John S. Mill has here taken upon him partly, we are told, for the moral and religious benefit of young men, partly, beyond all doubt, for the entertainment of any grown-up children he can collect into his little Theatre, the arduous and wonderful character of Jack the Giant-killer.

Let any other intelligible account of his book be given, and I, for one, shall endeavour to understand it. No other nearly so intelligible or probable has been yet produced.

SECTION II.

ON CHAPTER XXI.—THE FUNDAMENTAL LAWS OF THOUGHT.

Any student in Logic,—any one however slightly acquainted with the three great *a priori* Laws of Thought which constitute the subject of that science,—can detect the fallacies and misrepresentations which we now have to consider. The chapter is a tissue of the most senseless twaddle in the volume—little else than the random comments of one apparently wholly unacquainted with Logic, whose sole occupation is to get up some childish quibble upon every expression employed by Hamilton. There is no other portion of Mr. Mill's book which shows more clearly than these fifteen pages do, the extreme injustice to him of regarding him as serious in the composition of it.

The ostensible purpose of them is to show that Hamilton blunders, as usual, enormously when he specifies the Fundamental Laws of Coherent or Consistent Thought. These are, the Law of Identity, the Law of Contradiction, the Law of Excluded Middle. Hamilton's propositions respecting these are—*first*, that they are Fundamental, that is, universal postulates of Coherent Thought—postulates at the basis of all valid or Coherent Thinking; *secondly*, that they are not only Laws of all Coherence or Consistency in Thought, but of all Coherency or Consistency in all other known or imaginable existence; *thirdly*, that they occupy the chief place in Logic, constituting the whole essence of it; and *fourthly*, that they are *a priori* or necessary; *i.e.*, that the mature mind cannot even conceive them anything else but invincible Laws,—cannot conceive them able to be, under any imaginable circumstances, otherwise than as we find them to be, and does not therefore need to speak of them as probable, nor to suspend its judgment as to their invincibility in any given case, until it has *a posteriori* evidence of it in that case.

Here is a grand field for Giant-killing, and it is not thrown away upon our little Champion. Sir Jack bounds nobly into the very midst of the arena. The lofty air of low triumph with which he overturns each of these Propositions before his delighted audience is inimitable, and most appropriately combined with that 'low reach of thought' which I alone, of all the Giant-killer's critics, am unwilling to regard as anything else but the purest affectation upon his part.

Mr. Mill denies each proposition.

1. He denies that the Laws of Coherent Thought are Fundamental at all. He denies that they are the foundation of Coherent Thought (the only Thought Logic treats of), or that Coherent Thought could not very well exist without them. 'To call them, 'as Hamilton does, the Fundamental Laws of (Coherent) Thought, 'is a mere misnomer' (p. 407). A Law of being is a postulate of being, and to be a Fundamental Law of Thought, such a postulate must be universal, and have all Thought resting on it (p. 409, 'The use and meaning of a Fundamental Law,' etc.) This is true. But these three Laws of Thought, Mr. Mill says, are not universal. They are universal *only* in Coherent or Consistent Thought (p. 407, 'They are the Laws of Consistency. All inconsistency is a violation of some one of these Laws'). The three great Laws of Thought, therefore, treated of by Hamilton in Logic, are not Fundamental. This is Mr. Mill's inference;—and accordingly, whenever he mentions them, they are spoken of as the so-called Fundamental Laws of Thought—or the 'Fundamental Laws' of Thought, or what 'our author calls the Fundamental Laws of Thought.' Does any reader require to be reminded that Hamilton does not here speak of the three Laws in question, as Fundamental Laws of incoherent, inconsistent, or disconnected Thought,—but of Coherent or Logical Thought only? and that, even if he had done so, which of course he would do also, thought that is not consistent is as much a phenomenon as thought that is consistent, while Mr. Mill himself admits that these Laws apply *universally to all phenomena?* (p. 417, 'I readily admit that these three general propositions are universally true of all phenomena'). So that in every sense these Laws of being exist, even on Mr. Mill's showing, fundamentally or universally, in all thought whatever, as well as in that with which Logic is concerned. None of it can exist without them.

2. Mr. Mill denies that these Laws of Thought are also the Laws of all being. He professes to dissent from Hamilton entirely and indignantly upon this point. The scene here is most amusing. The Giant-killer dexterously slips on the Coat of Darkness, and with a huge Bludgeon in his hand this time, instead of the Sword of Sharpness, advances unseen close up to the Giant, and seems to belabour him about the legs, almost as high up as his very knees, in the most effective and unmerciful manner, amidst the cheers of the spectators. After a few words of forced concession on a different subject, Mr. Mill writes thus on this point:—'It is 'another question altogether what we ought to think of these 'three principles as speculative truths' (*i.e.*, as Laws of all Existence). 'Sir W. Hamilton considers them to be such in a very universal 'sense indeed, since he thinks we are bound to regard them as true 'beyond the sphere of either real or imaginable phenomenal exist- 'ence—to be true of Things in Themselves—of Noumena' (p. 417). Here follows the usual quotation to show, by its length, *how much* Hamilton was wrong. 'Whatever,' says Hamilton, 'violates the 'laws, whether of Identity, of Contradiction, or of Excluded Middle, 'we feel to be absolutely impossible, not only in thought, but in 'existence. Thus we cannot attribute even to Omnipotence the 'power of making a thing different from itself; of making a thing 'at once to be and not to be; of making a thing neither to be nor 'not to be. These three Laws thus determine to us the sphere of 'possibility; and this not merely in thought but in reality, not 'only logically but metaphysically' (*Lectures*, iii. 98). And again, 'If the true character of objective validity be universality, the laws 'of Logic are really of that character, for those laws constrain us, by 'their own authority, to regard them as the universal laws not only 'of human thought, but of universal reason' (*ibid.* iv. 65). Mr. Mill then proceeds in the same snarling, playful strain as he began:— 'A few pages before, our author took pains to impress upon us 'that we were not to regard these Laws as, etc., but they now 'appear to be necessities of thought and something more' (p. 417).

The Ignoratio Elenchi here can escape no one. Instead of showing us, against Hamilton, that the Laws of Logical Thought do not extend to all imaginable existence as well as to Logical Thought, Mr. Mill merely shows, or rather affects to show, at some length, and with wonderful powers of what he calls 'ratiocination,' that, as far as our evidence goes, they do not extend to—are not to

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be found in—any *un*imaginable existence; and to justify his mentioning to us so absurd a thing as the Unimaginable and its Laws, *i.e.*, no-man-can-imagine-what, and the laws of No-man-can-imagine-what, he tells us that it is of this Hamilton is speaking in the above quotations from the Lectures,—and that Hamilton there describes the Laws as the Laws of the Noumenon, the Noumenon being, as we all know, the Unimaginable in material things, *i.e.*, their no-man-can-imagine-what. Now let those who suppose Mr. Mill serious, reflect how unjust they are to him in such places as the present. It is perfectly false that the quotations from Hamilton are about the Unimaginable at all. They are about the Imaginable only. It is also perfectly false that Hamilton says anything here or anywhere about what are or are not the Laws of the Noumenon. Hamilton never uses the word Noumenon at all, as Mr. Mill and others have good reason to know, and never speaks of the unimaginable something which Mr. Mill understands by it, unless it is to say of it that, in Nature, there is no such thing. Is it to be supposed that Mr. Mill would choose to make two such outrageous misstatements seriously? And how perfectly excusable, on the contrary, and natural and harmless it is in him to have made them, as he has done, in sport, in order to employ the huge mystical Bludgeon, the 'Nomancanimaginewhat,' or 'Noumenon,' against his Giant!

Even the false issue therefore of this affected *Ignoratio Elenchi* is not made out. Hamilton, we see, does not say that the Laws of Coherent Thought are also the Laws of the utterly Unimaginable. But over and above this clear fact, shall we not be allowed to suppose Mr. Mill able to see that such Laws would be a simple self-contradiction,—that the imaginable Laws of the utterly Unimaginable are impossible Laws, being utterly unimaginable also; that what we know cannot be known by us as part of what we do not know at all, and that it is only in a very lax and quibbling sense indeed that what we know is ever said to be part of what is unknown to us,—in quite as lax a sense as what is true is part of what is false, what is possible, part of what is impossible, what is, part of what is not? Mr. Mill here affects, it is true, not to see this. Is he not as likely, however, as any of us to know that the Laws of a thing's Being are an essential portion of the thing, and that it is absurd in the extreme for us to speak of that thing as utterly unimaginable to us with the Laws of

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whose Being we imagine ourselves acquainted? Is he not, in short, as likely as any of us to know, however much he may affect not to know it, that the three great Laws of Thought cannot possibly be the Laws of the utterly Unimaginable, which is the only kind of unimaginable or unimagined that is here in question? Am I claiming too much discernment for Mr. Mill in this case (as well as too much argumentative integrity for him in the former) when I assert, that while he was writing these facetious pages, he must have been aware of the contradiction in terms here slurred over, and well knew that upon this, as upon every other point alleged against the passage, he was only finding fault with what Hamilton had never said? We see, at all events, that Mr. Mill's 'disproof' of Hamilton's statement, that the Laws of Logical Thought are the Laws of all existence, amounts to nothing whatever against Hamilton's statement. Jack, as usual, does not even touch his Giant. The *Ignoratio Elenchi*, or Coat of Darkness, and the Bludgeon, Noumenon, were of no avail, and intended to be of none, but merely to create an optical illusion for the mob.

3. Mr. Mill denies that these Laws of Coherent Thought are the principal part of Logic, asserting that they are, like Coherent or Consistent Thought itself, but a very unimportant and limited portion of it,—a minor and subordinate department (pp. 402, 404. See also the rest of the five last pages of Chapter XXI.) It has been already so fully shown that Coherent or Consistent Thinking is not either an unimportant, or limited, or minor, or subordinate portion of Reasoning (*i.e.*, of Inference and Logic), but the whole of it, that it is unnecessary to do this again; and Coherent Thought being the whole of Logic, it is easy to see that the three great fundamental and essential Laws of all such Thought can be nothing either 'minor,' or 'subordinate,' or 'limited,' or 'unimportant,' in connexion with Logic.

But Mr. Mill, in this Chapter, helps out his proposition that the three great Laws of Coherent Thought have no very great importance, by asserting from time to time, as it will be seen he does, that they are not universal Postulates at all, nor Laws of Nature at all, but human institutions,—mere precepts, canons or rules composed by Logicians, and of the same nature as the laws made by Parliament! (pp. 391, 406, 407.) Is there any one of Mr. Mill's patrons and friends who, in the interests of Mr. Mill, can be prevailed upon to attend to this remark? Mr. Mill tells us that the

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three great Laws to which Logic relates are precepts, as he understands Hamilton, his master (pp. 389, 391), and that he cordially accepts what he thus understands Hamilton to teach him? Is there any one who will not see the playfulness and jest of what Mr. Mill here says? I am of course prepared to admit that no mere precepts in Logic, be they devised by whom they may, are entitled to be regarded as of the same high importance as an *a priori* Law of Being, nor, in fact, of any great importance at all. But Mr. Mill has not suggested the smallest reason (as will be seen in the next paragraphs) for his assertion that the three great Laws of Nature here spoken of as existing in Thought are precepts, or ought to be treated of in Logic as precepts, or even that any one supports him in this queer assertion respecting them. I therefore deny that they are precepts, or anything else than the Laws of universal being, and, as such, in Logic, of the very highest consideration. This portion, therefore, of Mr. Mill's ramblings does not at all disturb the fact that the Law of Identity, the Law of Contradiction, and the Law of Excluded Middle, are of supreme importance in Logic. The reader will see clearly, upon this point, that even in stage effect little Jack is but tickling the Giant with a straw.

4. Mr. Mill asserts that the Law of Identity, the Law of Contradiction, and the Law of Excluded Middle, are precepts, and not Necessary or *a priori* Laws at all. He admits, indeed, that they are the Laws of Thought, treated of by Hamilton and all Logicians 'as the sole province of Logic' (p. 406). But he makes two assertions respecting them, which, as I have just said, will convince any reasonable man that Mr. Mill, when he makes them, is merely jesting. He *first* says that he agrees with Hamilton in what Hamilton describes as the sole province of Logic. 'I therefore 'accept' (says Mr. Mill) 'our author's second view' (there was no first view) 'of the province of Logic, which makes it a collection 'of precepts or rules for thinking, grounded on a scientific investi'gation of the requisites of valid thought' (p. 389). 'And again, 'Logic relates to the Laws of the Products of Thought' (he means of Thought the Product in contradistinction to Thought the Process). 'This would be mere nonsense in the scientific sense of 'the word Law. But understanding by Laws, Precepts, Logic be'comes the Science of the Precepts.' This seems to me a suffi'ciently accurate definition of it' (p. 391). And then, *secondly*, he says that he understands Hamilton to mean by the Law of Identity,

the Law of Contradiction, and the Law of Excluded Middle, what he himself means, viz., three great Precepts. This is sufficiently seen from the quotations just given, which show his agreement with Hamilton, and that it was in fact Hamilton that put the 'Concept' into his head. We may, however, add the following:—' He (Hamilton) ' disclaims, as applicable to Laws of Thought, the scientific meaning of the term, and declares them to be (like the laws ' made by Parliament) general Precepts; not necessities of the ' thinking act, but instructions for right thinking' (p. 406). Also: ' When we turn to the place where he is preparing to treat of those ' Laws (of Thought) one by one, Laws no longer mean Necessities ' of Nature. They are laws in a totally different sense. They ' mean Precepts' (pp. 386, 387). And ' if those who wrote before ' Sir W. Hamilton of the Law or Principle of Contradiction had ' meant by those terms what he did, namely, a Rule or Precept, it ' would,' etc. (p. 412). ' Nevertheless,' says Mr. Mill, ' I give my entire adhesion to this distinction' (p. 391). Now, I do not need to prove that Hamilton has given utterance to no such balderdash as that here attributed to him. No one even of Mr. Mill's friends will suppose he has. Nor if he had done so, would it at all alter the fact I state, and which these passages prove, viz., that Mr. Mill thus asserts on his own account as well as (he wishes us to believe) on that of Hamilton's also, that the Law of Identity, the Law of Contradiction, and the Law of Excluded Middle, are nothing but 'a Collection of Precepts.' It is also manifestly unnecessary to take up space in proving that these *a priori* Laws are not Precepts or instructions and directions how we ought to act in order to conform to the Laws of Nature, but are themselves three of those very Laws of Nature.

What is really worth attending to in this place is the circumstance which led to Mr. Mill's becoming involved in so preposterous a misrepresentation of Hamilton, if not of himself also, and which has been already alluded to in this Part, p. 129. It is this. (See the quotation and the note at p. 387.) Hamilton, when speaking of the *a priori* Laws of Thought, cautioned the Students in his Lecture-room to avoid the two confusions generally made by the Materialists, viz., *first*, not to confound what is merely universal and contingent with what is *a priori* and necessary; nor yet, *secondly*, to confound that which consciously selects with that which does not,—two distinctions which no earnest inquirer after truth would choose to omit or quarrel with Hamilton for insisting on. When we speak of the Laws of Thought as *a priori* or necessary, says Hamilton, this does not mean that we cannot disobey them, or that we must conform to these Laws of being whether we will or not, as when we say that things are necessary in the world of matter; which latter expression merely means that the material entity cannot but conform to Nature's Laws (whether *a priori* or only universal)—is, in short, invested with an *a priori* incapacity for disobedience; whereas, the other Entity, the Immaterial Entity —the Percipient Element of Nature—labours under no such incapacity, but is free to obey or disobey. In other words, if we choose to reckon the number 4 as 5, or to treat an equilateral triangle as not equiangular, or to act in any case as if that which is, is not, a Free Intelligence can do so, and thereby defeat all truth in the result, being thus punished for its disobedience; but that which has no selecting power—that which is neither an intelligence nor free—cannot do this. Such a power cannot itself, by any of that which we loosely call its action, avoid compliance, *i.e.*, select non-compliance, with either the *a priori* or the universal Laws of Nature. It can only conform. In consequence of this essential difference between the two kinds of agents, the Laws of Nature, even her *a priori* Laws, take the form of Preceptors or Precepts, of Instructors or Instructions, for the Free Entity, called Intelligence, being what it may either obey or not; while for Matter, the Entity which is not free, these Laws, whether *a priori* or only universal, take no such character, being, by it, only blindly and unconsciously, and, in that sense, necessarily, conformed to.

Mr. Mill will bear me witness that there is nothing a man of his convictions and his instincts would not sooner forgive than drawing the attention of young men, as Hamilton here does, to this distinction, which, obvious though it is, Mr. Mill and those who think with him have hitherto managed to keep pretty successfully out of sight. It upsets the whole of his 'System' at one jerk. No wonder it distracts him. The mere expression, 'a Free Intelligence,' has a maddening influence upon men of that clique and that calibre. Like the red cloth held up before the bull, it infuriates them. They may not well see for the moment what to say or what to do; but they soon devise some punishment for the offender, and for what, I believe, they regard as our insolence in speaking of a difference which betrays at once the dwarfed Intellect which discerns it not, viz., the difference between that which is conscious and that which is not—between that which selects and that which does not. Thus the Giant-killer here snaps at the word 'Precepts.' 'Precepts, say you? The *a priori* Laws of Thought and Being become Precepts to Free Intelligences? Very well, Mr. Giant. Let 'it be so. That is what I hold too. I consider Logic is only an Art, 'or at most only a Science, of Precepts (pp. 389, 391.) We are agreed. 'The Law of Identity, the Law of Contradiction, and the Law of 'Excluded Middle are Precepts, and to be no longer thought of as '*a priori* or Necessary Laws of Thought. Remember that. But, 'you wicked Giant, you still call them *a priori* and Necessary. 'Who can tolerate such inconsistency?' and the Sword of Sharpness flashes around the Giant's head, which seems to fall off several times.

In this way, Mr. John S. Mill, by the excitement resulting from the words of Hamilton's quoted at p. 387, was sent, as it were, spinning far beyond his own control into the remote and droll conceit, that as Hamilton said the Laws of Nature were in the room of, or took the form of, Instructors or Precepts to Intellect, pointing out to it how to act, this was saying that they *were* Instructors or Precepts, not Laws of Nature at all. It seems odd that he did not at once constitute them three Preceptors then instead of three Precepts; or, still better, Nature's three great Professors of Logic. And to give an air of probability to this absurd interpretation, Mr. Mill assures us that he can agree even with Hamilton upon this point, it is so obvious. But, while he asserts against Hamilton, and against all of us, that the three Laws of Thought and Being are not *a priori* or necessary Laws at all, but only three Canons, Rules, or Precepts, he nowhere assigns the smallest reason for saying this, except what he states at p. 391, viz., that this falls in better with his 'System,' which makes Logic a 'Science of Precepts,' and that he was under the impression (sly Mr. Mill!) that he had the authority of the great Hamilton for the innovation. Will his friends tell us that here also he is serious?

There is further proof of the melodramatic character of the Chapter in the fact that almost every assertion in it (and not those only against Hamilton) is the reverse of what is true. Is it likely that this would be the case if the Chapter were not in jest? This also then is worth attending to. It will cast a little light for us upon the question,—not indeed as to whether Mr. Mill is wrong or not when he denies Hamilton's account of the three great Laws of

Thought, so often named, for it will not do that, nor is anything further needed to do that,—but as to whether he is in jest or not when he denies that account of these Laws; when he asserts against Hamilton that they are not at the foundation of Coherent or Consistent Thought, nor Laws of all Being as well as of Consistent Thought, nor of the supreme importance in Logic assigned to them by Hamilton, nor *a priori*. It is therefore worth attending to.

The sixteen pages of this Chapter are, as I have said, among the very richest of all in the evidence of jest and of mock criticism; and happily this evidence is here so patent that it scarcely requires to be indicated.

The Chapter can be regarded as treating of two subjects: 1. The *a priori* Laws of Thought; and 2. The *a priori* Laws of all Existence. The first portion, extending to p. 416 inclusive, is subdivided into three subjects: 1. The Law of Identity; 2. The Law of Contradiction; 3. The Law of Excluded Middle. We have, therefore, four main subjects in the Chapter. I proceed to point out, under each head,—but merely to point out,—the inaccuracy of the more salient assertions not already mentioned, as well as also, whenever they recur, those already mentioned.

Under the Law of Identity.

(Page 406.)

It is not true that Hamilton does not regard the Laws of Thought always as Laws in the scientific sense of the word 'Law.' It is not true that he regards inaccurate or incoherent Thought as a thing impossible, but unhappily as a thing common enough. It not true that any one can say *a priori* what any one else can or cannot mean by what he says. It is not true that Hamilton disclaims anywhere, as applicable to the Laws of Thought, the scientific meaning of the term 'Law.' It is not true that he declares them anywhere to be Precepts or Preceptors.

(Page 407.)

It is not true that Hamilton anywhere asserts that the Law of Identity is not *a priori*, nor that that which is can sometimes be at the same time that which is not. [What shall we call this, patrons of Mr. Mill?] It is not true that to doubt a fact of consciousness is not to act a contradiction in terms, and what no one would pretend to do who understood the terms employed. It is not true that there is any other Logic than the Logic of Coherent and Consistent Thinking. Any other Logic is bosh and rubbish. To see a self-contradiction where a self-contradiction is, is to see how to think coherently or consistently, and it is not true that there is anything, in this, limited with reference to Logic. It is not true that there is any Logic beyond this. It is not true that any one cares about,—it is not true that any one but Mr. Mill thinks about or writes about,—the so-called Logic or 'System' of Incoherent Thinking. It is not true that to speak of that upon which anything rests, as fundamental to that which rests upon it, is a misnomer.

(Page 408.)

It is not true, although Mr. Mill affects the contrary, that all his Latin terms are not transcribed from Hamilton; nor true that he has any knowledge whatever of the German Logicians, except what he has from Hamilton. It is not true that Hamilton found or could find the smallest difficulty in establishing the principle of all logical affirmation upon the Law of Identity. It is not true that the identity between a whole and its parts is, in the smallest degree, a 'modified' shape of this axiom, whether we apply it to things, or to our conceptions of them. It is not true that anybody considers that Logic has anything to do except with things as we conceive them,—*i.e.*, with our conceptions of things. It is not true that, if the reality of things is anything different from, not corresponding to, our knowledge of them, Logic has in such cases anything whatever to do with them. Nor is it true that any writer, except Mr. Mill, pretends that it has. It is not true that there is any 'new' or 'old' version of the Principle of Identity. It is not true that Hamilton understands by it more than every one else understands by it. It is not true that we require more 'principles of logical affirmation' than one. It is not true that even if we did, this would be of the slightest consequence. [All the passages of illustration which here follow appear to belong to Mr. Mill's Logic of Incoherent Thought. We may therefore consign them to that Limbo.]

(Page 409.)

It is not true that the Law of Identity asserts in general terms, or in any other terms, the right of doing anything; nor true that this is in any case the use or meaning of an *a priori* Law. It is not true that a Universal Law is always or even often an *a priori* one. It is not true that the Law of Identity ought to be expressed in the circuitous manner Mr. Mill proposes. It is not true that there is anything more correct or more brief in saying, 'Whatever is true in 'one form of words is true in every other form of words which con-'veys the same meaning,' than in saying, What is, is. It is not true that the former is a wider expression of the act of Coherent Thought than the latter, nor even one nearly so wide. It is not true, as Mr. Mill well knows, that every one cares to perform acts of Coherent Thought. It is not true that Hamilton ever misapplies the principle of Explicit Language.

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When I assert a triangle to be equilateral, it is not true that I do not herein assert it to be equiangular. It is not true that its being equiangular is not as completely implied in the meaning of the terms, as if it could not in any case be an inference. It is not true that its being or not being an inference has anything to do with its being implied in the words. It is not true that Logic cannot, in the phraseology which Mr. Mill seems to prefer, 'postulate to be allowed to affirm' what it has proved, or what it can prove, just as well as what requires no proof. It is not true that any words mean what they do not explicitly declare, except to a person acquainted with their implied meaning. It is not true that Hamilton ever deviates, in the slightest degree, from the Logical requirement he is here described as insisting upon. It is not true that there are two senses in which the Principle of Identity can be taken. It is not true that the expression 'to postulate' is not as much employed by Mr. Mill himself as by Hamilton; nor true that there is any writer who does not speak of knowing things *through* their attributes, just as Hamilton does. It is not true that Mr. Mill does not himself have, almost invariably, recourse to this latter expression to help out his own meaning. It is not true that the re-affirmation in new language of what has already been asserted is ever admissible as a correct account of the nature of affirmation. It is not true that this re-affirmation is what anybody means by 'thinking of' a Concept through one of its attributes. It is not true that there are any Judgments that are not Analytic (see Part I. p. 34, etc.) It is not true that what Mr. Mill calls a synthetic judgment is a Judgment at all. It is not true that because two attributes can be affirmed of one subject, these two attributes can be affirmed of one another. It is not true that in such a case the attributes are ever not thought of as parts of the subject or group in which they co-exist. It is not true that the attribute predicated could possibly co-exist in a common subject with the rest of the group of attributes composing that subject, unless it were a part of the subject. [Do Mr. Mill's friends not know that what he here amuses himself with is so far from being true that it is childish ?]

(Page 411.)

It is not true that when we make a statement unknown even to ourselves, we are doing anything but talking nonsense. It is not true that anybody ever supposed that the Law of Identity, or any other Law of Coherent Thought, applied to operations of this description. It is not true that any writer on Logic differs from Mr. Mansel as to the utter nonsense of unknown affirmations or Synthetic Judgments. It is not true that there is a single writer who pretends to see sense in such things. It is not credible, even if it be true, that Mr. Mill would repeat such stuff as this merely because he once made the blunder, and now thinks he must abide by it. It is not true that there is any Analytic Judgment that will not communicate a fact, and so become one of Mr. Mill's Synthetic Judgments, provided it is addressed to some one ignorant of the fact it communicates. It is not true that there can be any judgment that communicates a new fact to the person who forms it. It is not true that there is any judgment in which the speaker knows the fact he states, which is not an Analytic Judgment. It is not true that, although all Analytic Judgments are Identical, all Identical propositions are Analytic. It is not true that Logical affirmation does not mean all affirmation. It is not true that saying, A book is a book, is an Analytic Judgment. It is not true that it is an affirmation at all. All Mr. Mill's remarks upon this subject are, I repeat, not only not true but childish. As far as the expression 'affirmative reasoning' has any special meaning in it, it is not true that the Law of Identity is, in the smallest degree, more the principle of it than of Logical (*i.e.*, of all) affirmation.

Under the Law of Contradiction.

(*Ibid.*)

It is not true that most people say they cannot believe that it is raining and not raining at the same instant; or that any one says he does not believe 2 and 2 make 5. It is not true that anybody, except a child of four years old, or an idiot, or Jack the Giant-killer, talks in this way. It is not true that that is the use of the word 'believe,' in English.

(Page 412.)

It is not true that the expression, $A = \text{not } A = 0$, instead of the equation, $A + \text{not } A = 0$, is not clearly an oversight in correction. It is not true that Hamilton did not know the difference between the algebraic symbols $=$ and $+$, for plus and for equality. [Friends of Mr. Mill, can anything serious exceed in childishness an imputation of this kind?] It is not even true that Mr. Mill can be so ignorant of Algebra, and of the sort of mistakes possible in it, as he here professes to be. If a person, because he sees the word *of* spelt with two f's instead of one in a book or letter of Mr. Mill's, infers from that circumstance that Mr. Mill must spell very badly, it is not true that such a person can be above the age, or at least above the experience, of a child. It is not true that any one acquainted enough with the Latin language to know what sort of mistakes in it could arise from accident, and what from ignorance, would infer, from page 439, that Mr. Mill did not know Latin, merely because he has put an accent upon a Latin word where those who know Latin never write one. Is it true that this misapplication and perversion of the Latin accent are to be accepted as evidence how little familiar Mr. Mill is with the Latin language, or even with Latin 'modes of thought'?—or is it not, rather, true that no one except a person almost totally ignorant of the language would make such an inference from such a perversion? And, besides this, it is not true that Hamilton's writings do not furnish abundant proof of his complete familiarity with the algebraic symbols, as well as with all other 'mathematical modes of thought.' It is not true that Mr. Mill has the slightest pretext for saying that he possesses one atom more of mathematical knowledge than Hamilton did, if he even possesses nearly so much. It is not true that such infantine remarks as those here made by Mr. Mill could have been made by him except in jest. It is not true that there is the smallest trace of confusion either in Hamilton's mind or in Hamilton's words when he suggests the substitution of Non-Contradiction for Contradiction as the name of the *a priori* Law here under consideration. It is not true that any other confusion of ideas is discernible except that in Mr. Mill's own words, viz. :—'It seems that no extent and accuracy of know-'ledge concerning the opinions of predecessors can preserve a 'thinker from giving an erroneous interpretation of their meaning 'by antedating a confusion of ideas which exists in his own mind.' Catch that, reader, if you can ;—one of those curious little cerebral convolutions of Mr. Mill's which seem trying to be more philosophical than they know how to be (p. 341). It is not true that the essential principles of nature do not 'enjoin' many things upon Free Intelligences. It is not true that the great *a priori* Law of Contradiction does not enjoin on such Intelligences the necessity of avoiding contradiction, as well as the necessity of distinctions. It is not true that Hamilton speaks of that which enjoins, as being an injunction, nor of an *a priori* Law of Nature as being a precept. It is not true that we need have recourse to a serious vindictiveness on Mr. Mill's part, nor to any other moving power in him except mere *gaicté de cœur*, to account for such buffoonery as this. It is not true that there is or ever was here the smallest difference of import between the terms Law and Principle. Both, as Mr. Mill well knows, denote what is *a priori*,—and neither of them Acts of Parliament or precepts. It is not true that those who wrote before Hamilton about the Principle of Contradiction did not call it and consider it an *a priori* Law of Nature as well as a Principle of Nature which was to influence human thought. It is not true that Hamilton regards the Law of Identity as enjoining identity, but as enjoining upon 'free Intelligences' certain conduct in consequence of there being this element in all thinking that is Coherent. Nor is it true that Hamilton regards the Law of Contradiction as enjoining Contradiction, but as enjoining upon 'free Intelligences' certain conduct in consequence of there being this element of distinction, and therefore contradiction, in all Coherent Thinking. It is not true that by the Law or principle of Identity any one ever understood or meant a property belonging to Identity. All mean only the Principle or Law of Nature called Identity. Identity is the Law, and the Law is Identity. No one ever meant that the one word denoted something belonging to that denoted by the other; and again, it is not true that by the Law or Principle of Contradiction any one, except Jack the Giant-killer, ever meant anything belonging to, or a property of, Contradiction. No one ever meant by such an expression anything whatever but something called Contradiction, which same thing was also called a Law of Nature or a Principle of Nature. Thus Identity the Law (of Nature) and Contradiction the Law (of Nature) are treated by Mr. Mill in the same jocular strain as Thought the Form when he called it the Form belonging to Thought (Part II. p. 133). It is not true that in such places the 'small word' OF ever means *belonging to.* One is here tempted to remind Jack again of the lesson he once read to a Giant:—'If there is a recommendation I would inculcate on 'every one who commences the study of Metaphysics, it is to be 'always sure what he means by his particles. A large portion of 'all that perplexes and confuses Metaphysical thought comes from 'a vague use of those small words' (p. 381).

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It is not true that the word 'Doctrine' would express the thing better than, nor so well as, the word 'Law.' It is not true that it would express it at all. It is not true that people's mode of viewing the Law or Principle, *i.e.*, their doctrine respecting it—was what they ever had in their minds or expressed by their words, when they spoke of a Law or Principle of Nature. Their Doctrine was one thing, and the Law of Nature, which was the Subject of the Doctrine, was another thing. It is not true that 'the Law of Contradictory Propositions' would be a more suitable expression than the Law of Contradiction. Mr. Mill himself, *more suo*, while he says it would, says also it would not;—'were it not for;' what valuable small words to Mr. Mill! In his hands they cover any amount of rodomontade. (See another instance, Note, p. 408.) It is not true that Hamilton speaks of any logical negation except what everybody, even Mr. Mill, speaks of. Mr. Mill admits this himself immediately after, and then follow two pages in which not one statement is made against Hamilton. Our Jack indeed seems to be fighting with somebody or something, and he evidently wishes us to fancy it is with Hamilton. But the reader will easily see both that it is not, and that every remark is merely for effect, —the improvised nonsense of one who neither understands what he is writing about, nor cares, except from the uninitiated, to hide that he does not understand.

Under the Law of Excluded Middle.

(Page 415.)

It is not true that Hamilton's definition of this Law is in the slightest degree tortuous. It is not true that Hamilton ever evades recognising, or seeks to evade recognising, the ideas of truth or untruth, nor allows others to do so without their being detected. It is unnecessary for Mr. Mill to tell us that he defines the Law in his own language, for no Logician would have written 'directly Contradictory.' Would Mr. Mill tell us in his own language what sort of things are 'indirectly Contradictory?' Does he not like the expression 'Contrary?' It is not true that Logicians have always meant by disjunctive judgments the sort of judgments Mr. Mill describes them to have meant. It is not true that they rendered the classification of propositions so incomplete as this represents them, 'leaving other kinds of disjunctive propositions unrecognised and without a name.' It is not true that the Law of Excluded Middle cannot be the principle of any disjunctive judgments but those described by Mr. Mill. It is not true that Mr. Mill has any knowledge whatever of Krug or Esser except the little which he has derived from Hamilton, although he so constantly names them for effect throughout his volume. It is not true that Hamilton's departure from the common usage of Logicians is ever unaccountable or ever not justified by very good reasons. It is not true that Hamilton defines Disjunctive Judgments as confined to those in which all the alternative propositions have the same subject. It is not true that there is anything arbitrary in what Hamilton has done respecting them, nor anything left thereby unrecognised and without a name. It is not true that Hamilton's sense of the word Disjunctive is a restricted one. It is not true that Mr. Mill's being unable to see a fact in Logic is the slightest reason for suspecting that any Logical Student cannot see it. It is not true that Hamilton says that the Law of Excluded Middle is or is not the principle of *all* Disjunctive Judgments; nor is it true that it is not the principle of all of them. It is not true that it is not the principle of Disjunctive Judgments founded in Contrariety as well as of those founded in Contradiction. It is not true that there being a step necessary in the one case, that is not in the other, makes any difference.

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It is not true that there is anything more correct or more plausible in saying that the Law of Excluded Middle is the principle of a disjunctive inference than in saying that it is that of any other disjunctive proposition. It is not true that the disjunctive judgment, whether premiss or inference ('Every son of A. is eithe

B, C, or D'), is not an instance of Excluded Middle. It is not true that what 'rests upon' our knowledge does not rest also upon the Laws of Thought; nor true that knowledge is not thought; nor true that what 'rests upon' our knowledge may not at the same time rest also on the Law of Excluded Middle. It is not true that the three great *a priori* Laws of Thought ought not to be described and explained immediately after the Definition of Logic in which they are mentioned,—just as Hamilton has done.

Under the Question as to the Laws of Being.

(Page 417.)

It is not true that the three great Laws of Thought are regarded by Hamilton as only universal principles, like the falling of the apple. He regards them also as *a priori* in all existence like the part of a thing being less than the whole of it. It is not true that young men even of very ordinary capacity are not sharp enough to see the difference between what is *a priori* and what is only universal. It is not true that there is any Metaphysician of the least note any more than Hamilton who does not consider these Laws to be Laws of all unphenomenal Existence as well as of all phenomena. It is not true that the Percipient Element of Nature —the Immaterial Entity—is a phenomenon. It is not true that Hamilton says, or that any one except Jack the Giant-killer ever said, that we are bound to believe that 2 and 2 make 4, or that the whole is greater than its part, or that we are bound to believe anything else that is *a priori.* It is not true that what is true of pain is not true of pain in itself, or that what is true of a millstone is not true of a millstone in itself. It is not true that a Thing is one thing, and a Thing-in-itself another thing. It is not true that Hamilton ever uttered such nonsense. It is not true that Hamilton has ever said a word about 'Noumena.' It is not true that Mr. Mill had the smallest doubt upon this point. It is not true that 'a few pages before,' or ever before, or afterwards ever, Hamilton told us,—much less took pains to impress upon us,— that the Laws of Thought are not *a priori* and 'necessities of thought.' It is not true that describing him as having done so has any other motive than the playful little spite (about free Intelligences, p. 387) concocted by Sir Jack to overwhelm his Giant with, under 'the optical illusions' of the drama. It is not true, and no one knows that better than Mr. Mill, that when we speak of the *a priori* Law or Principle, The whole is greater than its part, as being in the form of a precept for 'free Intelligences,' which they are careful not to violate, cutting their coat according to their cloth,—it is not true that when we speak of this Law as in the room of a precept, we 'take pains to impress' upon people that they should make such asses of themselves as to suppose that this *a priori* Law of Nature is not an *a priori* Law of Nature, but only a precept in somebody's work upon Geometry. It is not true that a Free Intelligence would be likely even to make the blunder on the subject which Mr. Mill here so magnanimously affects.

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It is not true that anybody 'believes' that the whole will be greater than its part to-morrow, or that 2 and 2 will make 4 next year. It is not true that when any one begins to express himself in this way, his friends do not become uneasy about him. It is not true that when Hamilton says the *a priori* Laws of Thought are Laws of all phenomenal and unphenomenal Existence, he says also that they are Laws of Noumena. It is not true that Mr. Mill even supposed he did. It is not true that Mr. Mill employs the word Noumena here for any other purpose than the very harmless one of making himself appear to know more than his readers. It is not true that 'existence, as we conceive it, is merely the power of producing phenomena.' It is not true that it is this in any sense or case or degree whatever. It is not true that a phenomenon cannot exist as well as that which is not a phenomenon; nor true that a phenomenon is a power of producing anything; nor true that there is not any other existence except phenomena. Poor little Jack is here entirely out of his depth.

(Page 419.)

It is not true that Hamilton does not hold all known existence to be relative. It is not true that he holds a verbal truism which he thus speaks of, nor which he speaks of as the Relativity of human knowledge. It is not true that any philosopher whatever has arrived at the conclusion that we know nothing except phenomena. It is not true that there is any philosopher, or any peasant, in the world who does not hold as well as Hamilton that the Primary Qualities of bodies exist in the bodies themselves. It is not true—it is mere harmless, melodramatic fiction—to say that Hamilton speaks of the qualities of Noumena. It is not true that

Hamilton is alone in seeing that phenomena are not produced by themselves nor by any portion of themselves. It is not true that any writer holds them to be so produced. It is not true that a phenomenon's qualities, Primary as well as Secondary, are not portions of itself, or (to use Mr. Mill's favourite phraseology) of it in itself. It is not true that Hamilton needs any other kind of argument than the Relativity of human knowledge,—the Relativity to the Ego, of all with which the Ego is acquainted,—to show that the Laws of Thought are Laws of all imaginable Existence, phenomenal as well as unphenomenal, of that which is known as well as of that which knows,—of that of which there are concepts as well as of that which has the concepts; also of the concepts themselves. It is not true that a self-contradiction is not impossible in point of fact; nor true that anything else but a self-contradiction is so; nor true that the free intellect requires any proof that a self-contradiction is so. All that he here says is utter childishness, as Mr. Mill would himself be the first to admit, when once out of the arena of the Giant-killer.

(Page 420.)

It is not true that there are the slightest grounds for Mr. Mill's dissatisfaction with Hamilton's observation upon the impossibility of self-contradiction in our Coherent Thought. Mr. Mill admits the impossibility. He merely objects to Hamilton's saying that in a self-contradiction Coherent Thought is made to cut its own throat. This point, to which I shall often require to advert, is of great use in showing, if we care to see, how far remote Mr. Mill is from the regions of seriousness.

Hamilton's proposition is, that, in every case of self-contradiction, it is Thought itself which declares itself to be incompetent to do that which it assures us that it perfectly does. But, says Mr. Mill, what does it signify whether the incapacity and disqualification result from an act of Thought itself or from something else? What signifies it whether it is a case of suicide or not? How does it make the nonentity of the act more complete? Answer: Because it establishes the nonentity of the agent. It antedates the impossibility.

Mr. Mill does not deny that the fact is so. He does not deny that Coherent Thought really does then become incoherent, *i.e.*, subverted and destroyed, and that it is through its own instrumentality that it becomes so. He merely objects to Hamilton's explaining

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self-contradiction persistently and emphatically in this way, as a suicidal act of Coherent Thought; and I would earnestly invite the reader's attention to the objections Mr. Mill specifies. There are three of these; and upon any one of them I should be willing to stake the whole question of Mr. Mill's seriousness. No further evidence could be needed.

His *first* objection is, What signifies it whether the Coherent Thought is subverted by itself (which Hamilton makes so important a part of his statement) or by something else? If Coherent Thought is annihilated, is there any peculiar enormity, asks our jocular Critic, in doing it by means of that which is annihilated? Jack's childish quarrel with his Giant about the subversion of thought being the act of the thing subverted, and therefore the act of nothing,—a subversion so often growled over in this volume, exhibits rather a flagrant 'want of subtlety in the quality of his mind,' if we are required to regard it as anything but badinage. Is it possible, friends of Mr. Mill, that he alone of all of us cannot see the force or import of the words Coherent Thought destroyed by the destroyed Coherent Thought? It simply means, Nothing is destroyed by nothing, or the annihilated is annihilated by the annihilated. Mr. Mill asks, Where is the peculiar enormity in this? We answer, as if he was serious in his question, the enormity of the self-contradiction is here carried to the highest point. A thing that does not exist subverting a thing that does, or a thing that does exist subverting a thing that does not, is, one would say, self-contradiction enough, and seems, if we are to believe him, to be all that Mr. Mill was able to grasp; if he even lays claim to having grasped so much. But the peculiar enormity of the case before us is that these two propositions are combined by the suicidal act upon which the Giant lays the stress that so much bewilders Jack. A thing which does not exist (viz., thought) is destroyed by a thing which does not exist (viz., itself). The enormity then is pretty considerable, and, in its own way, peculiar.

Mr. Mill's *second* objection is equally grotesque. In what other way, he asks, except by itself, can we imagine Coherent Thought subverted? The answer is, that in the first place it is utterly impossible for us to imagine or conceive how Coherent Thought could be annihilated by itself; as utterly impossible for us to imagine this as to imagine how a chair could annihilate itself, or how 2 and 2 could make 5; and secondly, that this annihilation is easily brought about by a fever, and a multitude of other things as well as by stupidity. Indeed, we have sometimes known even a keen spite to subvert Coherent Thought. Was Mr. Mill serious when he said that a thing can subvert itself? Was he serious when he asked how anything else could do it?

The *third* objection into which he flounders is of the same preposterous stamp. If our thoughts are really not to be trusted, asks Mr. Mill, in the usual naïve manner of such questions, what better proof of this could be given to us than our trusting our thoughts when they tell us that they are not to be trusted? Pray, friends of Mr. Mill, how is our trusting our thoughts upon any subject a proof that these thoughts are not to be trusted? Why should you so recklessly in this way seek to lower his understanding in the eyes of the world? If thought is an invalid process, says Mr. Mill, what better proof of this could possibly be given than that precisely this invalid process itself should prove it to us? A very Daniel! a Daniel come to judgment! cries M. P. of 'The Reader,' and a host of others. But how,—admirers of Mr. Mill,—how is an invalid process to prove an invalid process? It will never do. Take my advice, admirers and critics. Let it be Jack alone that speaks, and the galleries alone that listen to, such stuff as this.

But we must proceed. It is not true that it is he who believes in self-contradictions and their possibility that is the Sceptic. Such a one, on the contrary, is the most credulous of mortals. Mr. Mill, of all men, ought to know this. It is not true, therefore, that anything that Mr. Mill here says of the Sceptic has anything whatever to do with the subject here before us. It is not true that Mr. Mill's imaginary Sceptic has any subversive thoughts unsubverted. It is not true (it has been seen) that that which is invalid can show us what is invalid; and for the same reason, it is not true that it is competent to that which is uncertain to show us that anything is uncertain. If it does not know, how can it make us know? How can the Sceptic who says he does not know anything pretend to say that he knows even this,—even that he does not know anything? If he says anything, or thinks anything, he at once declares himself a fool,—at once becomes one. If uncertainty itself is uncertain, nobody but the blockhead says that anything *is* uncertain. If the Sceptic does not want to pass for such a one, he shuts up at once. Mr. Mill, of all men, ought to know this. It is not true that Hamilton ever takes the line of argument involved in saying that that which does not know anything knows something. It is not true that self contradiction does not always prove the invalidity of the thinking process at some stage of it. It is not true that either on the Absolute, or on any other subject, Hamilton does not admit this. The statement therefore in the note is not true. (Why does Mr. Mill not acknowledge where he found the quotation from Sextus Empiricus? He must know well that no one 'accuses' him of an acquaintance with such writers.)

(Page 421.)

It is not true that Mr. Mill is not in this page contradicting what he himself said at pp. 396 and 397 (Part II. 138, etc.), about a valid process being impossible from false premisses. It is not true that Hamilton denies this validity. It is not true that he does not uniformly and resolutely insist upon it. It is not true that he supposes the thinking process to be invalidated by any amount of incongruity between the hypothesis and the facts. It is not true that Hamilton anywhere observes ('translating from Esser,' or in any other way whatever) that truth consists solely in the correspondence of our thoughts with their objects. Mr. Mill would himself be foremost to acknowledge that this statement is utterly false, and was merely set down here as a jest among the other jests. It is absurd and unjust to represent such misstatements of Mr. Mill's as seriously made; almost as absurd and almost as unjust as to say that they are blunders. Although the thinking process is not invalidated by any supposed incongruity between the Laws of Thought and the Laws of those other things which form the subject-matter of Thought, it is nevertheless not true that the attainment of contingent truth would not be, by any such incongruity, rendered perfectly impossible, as is so clearly explained by Hamilton in the quotation at p. 419. Mr. Mill can only get on at all in this place by the aid of his Noumenon Bludgeon; but it serves him in little stead. It is not true that we know a Noumenon, in Mr. Mill's sense of that term, to be that from which phenomena proceed. Any one who will read page 421 carefully will there find an egregious illustration of that formulary which we have been so often obliged to repeat respecting Mr. Mill, viz., 'It would hardly be 'believed, prior to a minute examination of his writings, how much 'vagueness of thought, leading to the unsuspecting admission of 'opposite doctrines in the same breath, lurks under THE SPECIOUS 'APPEARANCE OF PHILOSOPHICAL PRECISION which distinguishes him' (p. 357). The purport of the whole page is that our thoughts of things can accord with fact whether we think about the things or not! That our thoughts cannot only be true to fact when we think about things that we can think about, but even when we think about things that we cannot think about! And how is it supposed that we can think about things that we cannot think about? Mr. Mill's answer here is, By thinking about them as things that we can think about! Is it credible that any one but a wag or a fool would have made such a statement? Is it unreasonable to call this Giant-killing?

I have now gone minutely through the whole Chapter, and I once more ask Mr. Mill's friends, Is it at all credible that such a series of mis-statements could have been made except in jest? In further proof of this improbability, it now only remains that I should show from Mr. Mill's own words that he himself admits, as perfectly true and indisputable, in the self-same Chapter, each of the four propositions which Hamilton asserts, and is here described by Mr. Mill as asserting, and which Mr. Mill undertook in this Chapter to disprove. It will be seen that Mr. Mill acknowledges the three Laws of Coherent or Consistent Thought—

(1.) To be Fundamental Laws of it;
(2.) To be the Laws of all Existence as well as of Thought;
(3.) To have all the importance in Logic which Hamilton assigns them; and
(4.) Not to be precepts, but to be *a priori* or Necessary.

Mr. Mill's own language is as follows:—

'All the three principles, which our Author terms the Fundamental Laws of Thought, are universal postulates of Reasoning, and, as such, are entitled to the *conspicuous position* which 'our Author assigns them in Logic' (p. 416). 'He' (Sir W. Hamilton) 'is quite right in regarding the whole of Logic' (the Logic of Coherent and Consistent Thought) 'as *resting on* the three 'Laws specified by him' (p. 407). 'The Principle of Identity' (and so of the others also) 'is not the peculiar *groundwork* of any '*special* kind of thinking, but an *indispensable* postulate in *all* 'thinking' (p. 411). 'I readily admit that these three general 'propositions are universally true of *all phenomena*. I also admit 'that if there are any *inherent necessities* of Thought, these are 'such' (p. 417). 'Whether the three so called Fundamental Laws 'are Laws of our thoughts by the native structure of the mind (!) 'or merely because we perceive them (!), to be universally true of 'observed phenomena, I will not positively decide; but they 'are Laws of our thoughts now, and *invincibly* so. They may or 'may not be capable of alteration by experience (!); but the con-'ditions of our existence deny to us the experience which would be 'required to alter them' (to suggest the possibility of altering them) (p. 418). 'We are quite safe in looking upon them as the *Laws of 'Existence*' (*ibid.*).

Now, then, the reader sees clearly not only that every allegation of Mr. Mill's against Hamilton respecting the Fundamental Laws of Thought is the purest fiction; but also that Mr. Mill is aware it is so, and acknowledges that he is aware it is so.

SECTION III.

ON CHAPTER XXII.—HAMILTON'S IMPROVEMENTS IN LOGIC.

THIS Chapter is to show us the uselessness and unimportance as well as the truthlessness of two doctrines of Hamilton's, which, it will be seen, Mr. Mill himself ultimately admits to be both useful and important, as well as true, viz.,—1. That all reasoning is really as much in Comprehension as in Extension, although Logicians write as if it were in Extension only; and that this second interpretation of the Syllogism acts as a check upon and a corroboration of the other. 2. That we have a right to hear a clear statement in Logic as to whether, in the speaker's mind, the Predicate does not extend beyond the Subject, or does,—is quantified to the Subject, or is quantified beyond it,—*i.e.*, as to whether it is true of the Subject only or of more than the Subject, when we only speak of it as if it were true of the Subject.

In other words: The *first* of these two doctrines is that, when we say The sky is blue, we mean quite as much that, in Logical language, what is blue is part of the sky as that the sky is part of what is blue, although Logicians always express themselves as if they meant the latter only,—as if they considered that it was the sky only, and not also what is blue, that could be regarded as a part of the other. Hamilton reminds us that in common discourse it is the blue that is regarded as the part, and recommends that we should interpret the syllogism in this way as well as in the other. The *second* doctrine is that, although when in ordinary discourse we say The sky is blue, we only quantify the Predicate to the Subject,—we only think of blue as true of the sky, yet in Logic, and to manipulate the matter logically, we need to say distinctly whether our statement is that, under the limitations within which we speak, the sky is *the* blue thing,—the only blue thing, or *a* blue thing,—

one of sundry blue things;—that, in short, we often need, for Logical purposes, to possess a more extended knowledge and to employ a more extended expression of our thoughts than for common discourse.

Jack assaults his Giant upon both these doctrines. Let us see with what success.

Before he makes his first lunge, he asks us to listen to him. Mr. Mill has something to tell us that affects, he says, the whole question as to these two doctrines. This address extends over seven pages (from p. 423 to p. 430). And what will it be supposed is the object of it? It explains to us, in the clumsy language of one unacquainted with the subject, the grounds and truth of the two doctrines he is about to attack!—nay, gives us the *rationale* of the whole thing with an amount of detail that few readers will care to follow, although it is important that all should do so. Mr. Mill here explains to us—

1. That it is chiefly in Comprehension that we interpret our language in ordinary discourse, and that there is no difficulty whatever in so interpreting it.

2. That in Logic it is in Extension that we interpret, and that up to Hamilton's time this has been the sole mode of interpreting in Logic. [We cannot, of course, use the Extent of the predicate without knowing what that extent is.]

3. That the practice of always so interpreting our logical language, instead of also interpreting in Comprehension, as we do ordinary language, has been mischievous to truth and productive of prejudice against the syllogism, although the two modes of interpretation give exactly the same logical result.

But these are precisely the three Propositions upon which Hamilton grounds the two Doctrines which Mr. Mill is now going to attack. Mr. Mill analyses and explains their truth. He writes thus in these seven curious preliminary pages:—'All judgments are really judg-'ments in Comprehension' (p. 423). 'All our judgments are judg-'ments in Comprehension, though always, unless for some special 'purpose' (as in Logic), 'expressed in Extension' (p. 427). 'All our 'ordinary judgments are in Comprehension only, Extension not 'being thought of. But we may, if we please, make the Extension 'of our general terms an express object of thought, and this may 'be called thinking in Extension' (p. 428). 'There is thus a judg-'ment concerning attributes, called a judgment in Comprehension, 'which we make as a matter of course, and a possible judgment in

'Extension, which we may make, and which will be true, if the 'former is true' (pp. 428, 429). 'And this explains why—though 'the meaning of all propositions, in which general terms are used, 'is in Comprehension—writers on Logic always explain the rules of 'the syllogism in reference to Extension alone' (p. 429). 'The 'propositions in Extension being exactly equivalent to the judg- 'ments in Comprehension, served quite as well to ground forms of 'ratiocination upon' (*ibid.*). 'Their' (the Logicians') 'mode of pro- 'ceeding' (*i.e.*, not interpreting their syllogisms and judgments, in Comprehension as well as in Extension) 'has been attended with 'some practical mischief, by diverting the attention of thinkers 'from what really constitutes the meaning of Propositions. It has 'also been one of the causes of the prejudice so general against the 'syllogistic theory' (pp. 429, 430).

Here, then, it will surely be admitted, is an extraordinary way for a writer who is serious, to begin his attack. He takes great pains to show that Hamilton's two Doctrines are based on fact and truth, before he demolishes them! Does it seem unreasonable to say that seven such pages make an appropriate preamble to a sham attack ?—or is the attack, after them, likely to be a serious one ?

What we have now next to attend to are the two Doctrines themselves, and what Mr. Mill has to say against them. The *first* is that we ought not to limit Logic, as we do, to one interpretation of the syllogism and its judgments,—that we ought to admit both interpretations into Logic, instead of adopting only one, as we have hitherto done. The *second* doctrine is that, in order to interpret in Extension as we do in Logic, we ought to quantify our Predicate in express terms, not only to its *minimum*, its narrowest application, as we ordinarily do in common discourse, but to its *maximum*, its wider application, which, even in Logic, we often neglect, the interpretation in Extension being most truthfully and securely and concisely conducted when we have a clear understanding as to whether the Predicate is held true of the subject only (the *minimum*), or is also held true of other things (the *maximum*).

OF REASONING WITH THE COMPREHENSIVE WHOLE.

We take these, Hamilton's two celebrated contributions to the Science of Logic, one after another; and first, as to the propriety of introducing the Comprehensive Whole into Logic,—*i.e.*, of interpreting the Syllogism and its Judgments, in Comprehension as well as in Extension.

The soundest and clearest expression of the principle upon which Logic—the Science of Coherent Thought—is conducted, is that the Part of the Part is a Part of the Whole. Now there are in Logic, as every one knows, two different Wholes,—two different kinds of things called 'Wholes' [and therefore, of course, two different corresponding kinds of Parts]; viz., the Logical Whole, or the thing said of another thing; as the 'blue,' when we say The sky is blue;—and the Metaphysical Whole, or thing of which the other is said; as the 'sky,' in this place. The first Whole, 'blue,' or 'what is blue,' is regarded as consisting of all that is blue,—of all the things in Art or Nature that are included in or under the class, blue things. Blue ribbons are a part of this Logical Whole; so are blue eyes, blue flowers, etc. In this way blue is called the Whole in Extension, or the Extended Whole; and a good big Whole it is, although it consists of only one attribute; while, on the other hand, each of the blue objects is the Metaphysical or Comprehensive Whole. The blue sky is this sort of Whole. It comprehends the blue, which is therefore regarded as Part of it; for every attribute comprehended in it is thus regarded as Part of it; and it is naturally the Whole in relation to them,—a comparatively small Whole, however, although consisting of no end of Parts or Attributes.

The first of these two Wholes was thought of and devised for Logic only, and is therefore called not only the 'Whole in Extension,' but the 'Logical Whole.' We only think of blue here as a Whole in a Logical sense. But we think of the sky and other blue things as, each of them, a Whole in the ordinary colloquial sense. Now, what Hamilton says is, that Logic has hitherto been accustomed to proceed as if there were only one Whole instead of two, and as if the subject could not be spoken of as a Whole, in Logic, as well as the predicate can, always thinking of the more abstract as the Whole, and the less abstract as the Part; whereas in Logic [as well as in common discourse] we can quite as truly speak of the subject or less abstract as the Whole, and of the predicate or more abstract as the Part, employing to distinguish the two Wholes the expressions 'In Comprehension' and 'In Extension.' This is Hamilton's first statement. Now the reader must watch carefully where Mr. Mill denies this, as he affects to do. It will be seen that he does not deny it.

Hamilton's next statement here is that all reasoning in the one sense, or quantity, is 'exactly equivalent' to that in the other quantity,—that the argument is of precisely the same force and import in the Comprehensive Syllogism as in the Extensive one; but that by employing both interpretations in Logic, instead of one only (and the whole interpretation is a purely mental affair), we have a greater security for truth; just as, in any case, two heads are better than one. Mr. Mill assents to this (p. 429). But athirst for something to say, to carry on his farce where he knows there is the usual dearth of matter, he seizes upon this fact as a pretext for reporting Hamilton to say that all he contends for is a transposition of the premisses (pp. 430, 431). Now this is not true, and Mr. Mill knows it is not true. Mr. Mill himself admits, a few lines lower down, that Hamilton says he does not even contend for this transposition of the premisses, nor any other verbal alteration,—that what he contends for is the mental interpretation only. In further proof of this, turn to the next page (p. 432), where you find Mr. Mill himself acknowledging that the difference contended for by Hamilton is a '*real*' one. Is it likely that, if there was a 'real' difference, Hamilton would not have seen it, even if he had had none to start with, and, having seen it, would deny that there was any, and proceed to assure us that all he pleaded for was a difference in the order of the premisses? It is perfectly false, then, in Mr. Mill's admirers to tell us here that Hamilton made any such statement as that he does not contend for 'a different kind of reasoning,' but only for a different order of the premisses, or to tell us that Mr. Mill could have been in earnest when he said Hamilton had done so (p. 431). The frolicsomeness here is manifest. Mr. Mill himself admits (p. 430), that when we reason in Comprehension there is, as Hamilton truly describes, no change either in the order or in the import of the language,—that the two kinds of reasoning, that in Comprehension and that in Extension, are only 'two modes of construing the meaning of the same syllogism' (p. 431), and 'employing the same words, having, sometimes in our mind the meaning in Extension, sometimes that in Comprehension' (p. 432),—two modes of viewing the relation in which the three terms stand to one another. The two Wholes of each Judgment are correlative. The two modes of reasoning by means of them,

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correlative also. Where one exists the other cannot but exist. The same words express both. The same fact is stated in both.

Hamilton also observes that, in Comprehension, the copula 'is' means 'contains in it as part of it;'—that when in this sense we say The sky is blue, we mean that it contains blue in it as part of it; and that in Extension the copula has the correlative sense, 'is contained under,'—the sky being then contained under, or classed under, what is blue. Mr. Mill's remark on this point (pp. 431, 432) has no connexion with our question. He merely says, as in every chapter, that he has a great aversion to its being said that one class is contained under another, or in another, or that anything is contained under a class, or that an object or a class contains in it such and such parts. Mr. Mill does not in these words say, or mean to say, as one might fancy, that he objects to our double construction of the Syllogism, or prefers Extension to Comprehension, but merely that he does not like our usual way of expressing it by Wholes and Parts in Logic, which Mr Mill seems to mistake for physical wholes and physical parts. This point, however, has been fully discussed in Part I., in the section upon Judgment, and has nothing whatever, I repeat, to do with our present question. Nor is he serious in saying the thing at all. He goes so far here as to admit (p. 434) that we may always, *pace suâ*, speak of the subject in Extension as Part of its own predicate, the predicate being regarded as its Whole. 'To the point of view of Extension (says Mr. Mill) that relation is applicable.' He even admits (*ibid.*) that in Analytic Judgments (*i.e.*, in the statements of persons who know the facts they state) we may also, *pace suâ*, speak of the subject as a Comprehensive Whole, and its predicate as a Comprehensive Part; which is all we ask him to acknowledge; for, as has been already explained (Part I. pp. 34 and 61), all Judgments in Logic, without a single exception, are Analytic Judgments, and all Logicians, without a single exception, consider that they are so. Every word of this grumbling, therefore, about Logical Parts and Wholes, and about 'In, Through, and Under,' is senseless, and means nothing whatever beyond the external appearance of 'triumphant animadversion' that is necessary for the Drama.

With regard, then, to this first Doctrine, the reader is now aware that the whole thing in question is the introduction of a second interpretation for the Syllogism, not intended to replace the other, but to co-operate with the other, involving no change whatever in the import or in the language of the Syllogism or of its propositions, but nevertheless in itself a real result, obviating some hurtful tendencies of the Logic in which this double construction did not obtain, and rendered the easier to adopt, by the fact that it is the interpretation which we adopt for our ordinary language, proved also by the same fact to be the simpler and less artificial interpretation of the two, and, as it is the counterpart and correlative of Extension, applying, of course, wherever Extension does.

We now come to consider Mr. Mill's objections to this first Doctrine, or doubled interpretation of the Syllogism. They are four. He considers—1. That each judgment is thus made to involve new matter,—to introduce, in fact, under the second interpretation a second judgment (p. 432, 'The difference,' etc.); 2. That this is not so,—that there is no second judgment introduced,—no new matter,—that this is untenable on his part,—that Hamilton is right, but that, *if* there were two, as he (Mr. Mill) was at first supposing, there would still be but one, all distinction of import between Comprehension and Extension being, as Hamilton truly says, unsustainable (p. 433; the whole paragraph beginning 'Nor is this'); 3. That this additional interpretation of the Syllogism is a useless difficulty to the learned, and still more so to the learner (pp. 433, 434, and 444); and 4. That though it is true enough to speak of the sky as part of (as one item in) what is blue, it is not true to speak of blue as part of (as one item in) the thing called 'the blue sky' (p. 434, 'I need not dwell,' etc.)

Of these four objections the last has been fully discussed in Part I. (from p. 40 to p. 66). And Mr. Mill himself admits that it does not hold in the case of Analytic Judgments (*i.e.*, the Judgments in which people know what they are speaking about), which are the only kind of Judgments that ever occur in Logic, whether there are any other sort of Judgments at all or not. [See above, p. 204.] As to the third of these objections, it is a mere assertion, to which I accordingly reply with the opposite assertion, that no Logician experiences the smallest difficulty in looking at each syllogism in this double point of view, and that there is no Student of Logic to whom the import of the syllogism is not thus rendered clearer and fuller than before. I defy Mr. Mill, or rather Mr. Mill's friends, to produce a single instance. And if any proof is required of the jest or fallacy in this one of Mr. Mill's objections, we have it in the fact that the new interpretation in Logic is but the old one in common discourse, and what every one, even the learner, regards as not only thus the more familiar, but also as the more natural and simple and less artificial of the two (pp. 425-433, *et passim*). And with regard to the uselessness or use of this additional construction for the syllogism, it is of immense use. It tests our test (p. 429, *et passim*). It assists in the accuracy of our Logic, just as two different modes of making identically the same calculation in Arithmetic guard against inaccuracy in Arithmetic. Is that not of immense use? It also carries the Logician deeper—twice as deep—into the Coherence and Philosophy of Coherent Thought.

The two other objections are entitled to the special attention of those severer critics who will not tolerate the notion that Mr. Mill has put all these fictions and drolleries together to ridicule and cajole a certain class of aspirants in Philosophy,—a class who, as the book written for them attests, know literally nothing on that subject, and who, nevertheless, as all such, aspire to know everything. It must be carefully borne in mind that what is here in question is Hamilton's doctrine of an interpretation in Comprehension for each Judgment as well as,—not, instead of,—but as well as an interpretation in Extension for each. Now, the first of Mr. Mill's two remaining objections to this Doctrine is that the interpretation in Comprehension and the interpretation in Extension do not yield the same assertion (p. 432); and the reason assigned for saying that they do not, is that the interpretation in Extension yields two propositions, while the interpretation in Comprehension yields only one of these. I appeal to any one's understanding whether this is not a mere quibble? Is it true that the two interpretations thus described do not yield the same assertion? Do they not both represent the sky as blue? And is it true that the one interpretation (that in Extension), yielding another assertion also (viz., that there are other blue things beside the sky) in addition to the same assertion, forbids our saying that it yields the same assertion also? But although Mr. Mill *seems* to say that it does forbid it, and that the two interpretations give two different assertions, and that this constitutes a radical objection to Hamilton's use of these two interpretations, Mr. Mill himself admits, on the next page, that there is the same assertion in the two interpretations. [Both statements,—What is blue being a portion of the sky, and the sky being a portion of what is blue,—'one and the same assertion, as I affirm them to be,' p. 433.] But even if the double construction did not give the same assertion, Mr. Mill was bound to point ont how this constituted an objection to the double construction; a part of the subject which Mr. Mill has entirely omitted. The fact is that he is here doing what he as a mere reviewer requires frequently to do, and calls 'driving two conflicting opinions together in a team.' He wishes to adopt Hamilton's new mode of construing the Syllogism, even (if we would allow him) to the exclusion of the old mode, but is of course obliged by his position to have at least the appearance of rejecting Hamilton's doctrine, and defending the old plan of an interpretation exclusively in Extension.

So much for the first of these two objections. The second is one of the gems of the Chapter, and of the book. It covers page 433. Any reader who cannot here see Jack at work in a genuine game of Giant-killing, I abandon as altogether impracticable. Mr. Mill here says, rather abruptly after the foregoing objection, that, in the first place, he agrees with Hamilton in holding (contrary to that objection) that the judgment in Comprehension and the judgment in Extension are only one and the same judgment and assertion; but that, in the second place, even if they had been two judgments, they would only be one. 'But supposing them, for the sake of 'argument, to be two different assertions . . . even on the untenable doctrine that there are two different judgments in the case, 'the distinction between judgments in Extension and judgments 'in Comprehension is not sustainable' (p. 433). And this silly statement comes to us lurking as usual under that specious appearance of precision and philosophy which, throughout this comic volume, distinguishes Mr. Mill. But, friends and admirers of Mr. Mill, why limit his 'low reach of thought' to anything so low, in reach, as this? Why tell us that he wrote this seriously—that he knows no better? Why wonder that we begin to suspect you of having joined his Circus?—of being in league with him in his joke, as those apparently disinterested spectators who, with great-coats on, sometimes descend from the galleries to help the clown out with his exploits? Mr. Mill's proceedings are very miserable; but why make them more so than they are, by assuring us that they are serious?

THE QUANTIFICATION OF THE PREDICATE.

I have thus far shown how completely nothing Hamilton's critic has to say against the first of the two Doctrines we are here considering. I now pass on with Mr. Mill to the second of these Doctrines,—the Quantification of the Predicate, while he examines it, as he says, 'by the light of the same principles' as he employed against the truth and usefulness of the first. (P. 434.)

Hamilton's doctrine is that there is often an advantage in hearing, and that we therefore have a right always to hear, a clear statement in Logic as to whether the predicate is to be understood as extending beyond the subject or not,—as true of more than the subject, or of the subject only,—as having its greatest quantity or its least. Its being expressly and immutably fixed to either of these extents or quantities is what in Logic is called being quantified. When we say in common discourse, The sky is blue, we limit our thoughts of blue, and therefore, in our thoughts, the attribute itself, for the moment, to the sky alone. We do not, as Mr. Mill truly says, think whether there is, or that there is, any other blue thing. This is, to quantify the predicate in thought. We quantify it then to the subject,—to its minimum. We limit the predicate in thought to the sky only, *i.e.*, regard it as true of nothing then present to the mind, except the sky. But observe, 'then present to the mind,' for the limitation is in thought only. In the case we speak of we use no word importing this. We do not say, The sky is what there is blue, or, The sky alone is blue; for if we say that we quantify in words. We merely think that, as far as our thoughts are concerned, it is so,—that the blue we are thinking of has nothing *that we are thinking of*, to belong to, but the sky. We also quantify the predicate in thought in common discourse when we say All equilateral triangles are equiangular triangles, and when we say The sky is not all that is blue, or, The sky is one of our blue objects. In the latter instance the quantification is not in thought only but in words also; and in the case of the triangles, the quantification which takes place in thought is also that which exists in nature, although the less-informed thinkers may not be aware of this, and although no word indicates it. Now what we thus do in common discourse, in thought only, is what Hamilton requires us to do in express terms in Logic, just as we do it also in express terms in common discourse whenever it suits us to do so,—as, The sky is one of our blue things,—or, There are more blue things than the sky. Hamilton says that doing this would help us to test, by means of Logic, the truth of extra-logical statements when occasion requires us to do so,—that we can by this expedient do more easily that which constitutes the whole aim of Logic, viz., discover whether the inference is or is not faithful to its premisses,—whether the thought is coherent and *a priori* or not.

This, then, is the Doctrine which Mr. Mill here opposes. He says that he does not see it to be attended with the advantage here ascribed to it. He also says that it is founded upon the fallacy of supposing that we always, in thought, assign some extent to the predicate,—always think of it as either true of more than the subject, or as true, at least, of the subject; which Mr. Mill says (affects to say) we never do. We never, according to him, quantify the predicate, in thought, in common discourse, except when we do so in set terms. Let us first attend to the alleged fallacy.

1. Mr. Mill's main objection to Hamilton's doctrine is that it asserts every predicate to be quantified in thought even when we do not express the fact (p. 436). Assuredly it asserts that. But does Mr. Mill's own doctrine not do the same? Mr. Mill himself everywhere admits (pp. 425, 437, *et passim*) that every predicate is quantified both in the speaker's mind and in the hearer's, as being (when no quantity is specified) coextensive with the subject;—not as true of more than the subject, nor as true of less than it, but as true of it only. 'The predicate is then present in thought,' as Mr. Mill expresses it, 'only in respect of its Comprehension.' This is one form of its quantification. This is the minimum of its quantity. The other form is when 'it is present in thought in respect of its Extension;' but this no one thinks of, unless it is expressly stated. This is the maximum of the predicate's quantity. There is, in all this, complete accord between Mr. Mill and his great Logician,—although Mr. Mill has ingeniously done everything he could to make it appear otherwise.

It would, of course, be easy to suppose that Mr. Mill was bewildered by a new subject placed before him for the first time, and that he probably fancied Hamilton meant by 'quantifying the predicate,' applying it *beyond* the subject,—giving it a more extended application than merely accepting it as true of the subject,—assigning to it the maximum of its quantity, when no quantity is stated; and that what he is finding fault with Hamilton for, is for doing this,—for supposing that when we say The sky is blue, we have in thought that there are other things blue beside the sky. But Mr. Mill knows very well that Hamilton does not say this, nor mean this. To suppose that Hamilton said this would be such an exceedingly childish and stupid blunder upon the part of any of his readers, however unacquainted with Logical language, that, as in the case of supposing Mr. Mill to think that Hamilton did not know the meaning of the signs + and = in Algebra, I, for one, decline to ascribe any such stupidity or 'low reach of thought' as this to Mr. Mill. He merely contrives the confusion, because he thinks that his admirers will (I know not why he thinks so lowly of them) follow him implicitly through it all, and believe in all the Giant-killing they see happen in it. The great point, however, to attend to here is that Hamilton holds precisely that which Mr. Mill holds after Hamilton, viz., that in common discourse we always quantify the predicate in thought to its maximum, when we so express it, and to its minimum whether we express it or not as so quantified.

2. Again. 'Whether the predicate is more extensive' than the subject, or only as extensive, 'is generally' (says Hamilton) 'of no consequence, and hence the common reticence of common language' (Lect. iv. 259). This also Mr. Mill agrees with. See Note, p. 441, where he writes thus :—'The truth is that ordinary language quantifies the predicate' (he means, extends it beyond the subject, the only quantification he chooses to speak of) 'in the rare cases in which it is quantified in thought, and in no others.' (See also pp. 428, 439, 443, *sub finem, et passim.*)

On these two first points, No. 1 and No. 2, there is no dissension whatever between Hamilton and Mr. Mill, although Mr. Mill seeks to establish a great deal, nor between Mr. Mill and any of us. We, in the first place, always quantify the predicate in thought, even when its quantity is the minimum and unexpressed. We always, then, think of the predicate as what is *sufficient* for the subject,—as what is true of the subject, whether it is true of anything else or not,—we quantify it at its minimum, or, as Mr. Mill says, 'in respect of its Comprehension' (p. 437). In the absence of any definite expression, we always give it that much quantity in thought, whether that be all the quantity that our knowledge supplies us with for it or not; or all that in truth and nature belongs to it or not. And secondly, except in comparatively 'rare' cases, we give it no greater quantity, in thought, than that, any more than in expression,—we give it no more to be true of. When we give it the greater quantity, in thought, we give it in expression also, and when we give it in expression we give it in thought.

3. But there is another, a third, statement of Hamilton's. He says that 'ordinary language quantifies the predicate so often as this determination becomes of the smallest import' (iv. 259). This also Mr. Mill admits (p. 439), and every one admits.

4. Hamilton says also, fourthly, that the science of Logic con-

cedes to us the right of hearing the quantity of the predicate,—*i.e.*, of hearing whether it is the maximum or the minimum, distinctly stated, whenever an occasion arises in which it appears to us uncertain which it is, or uncertain whether it may or may not be important to know which it is; and this is another point upon which Mr. Mill agrees with Hamilton and with all of us. He sometimes, it is true, writes as if he were under the impression that Hamilton required us to express this quantity always in ordinary discourse, or at least always to express it in Logic, as well as that we should do so, in all cases, in the same ridiculous forms in which Logicians for the sake of brevity are apt to express their illustrations, such as 'All Ox is some ruminating,' instead of The Ox is one of the ruminating animals; or All bull is all terrible, instead of The bull is the only animal I am afraid of. But Hamilton requires nothing of the kind, and Mr. Mill knows that Hamilton does not. These are merely the popular fictions of the reviewing critic playing Jack, and ought not to be too severally judged.

5. Finally, and fifthly, as to the question of usefulness, Hamilton says that, by creating within ourselves the habit of so limiting every proposition which we desire to deal with logically, we shall greatly correct and simplify our logical forms, and more effectually guard against false conclusions or inconsistent thought, than we could without this constant recognition and without this habit. [See that eloquent page of Hamilton's upon this subject in the *Lectures*, iv. 298.] Mr. Mill, in his opposition upon this point, merely says that to him the doctrine seems useless and confusing (*passim*). He assigns no reason for saying this. There is, therefore, nothing to refute. We must even rejoin that most probably it does. 'It does not,' he says, 'facilitate the process' (for him, of testing truth by Logic) 'in any *appreciable* degree' (p. 445). But although there may, of course, be no degree of this merit that he can appreciate, there may be some degree of it that others can, and that there is, he himself admits (pp. 422, 423, *et passim*). 'As to the objection,' says Hamilton, with his keen eyes into the future, 'that such quantification would be useless and superfluous, disorderly, nay confusive, this only manifests the limited and one-sided view of the objectors' (iv. 297). It will be seen later that, apparently smarting (if we are with his critics to suppose him serious) beneath this scourge of Hamilton's, Mr. Mill trims and hedges to an enormous extent at page 439, retracting entirely even this incapacity upon his part to discern in the doctrine an appre-

ciable degree of usefulness. But where is the dignity of this avowal in such forms as those at page 439 :—'In this point of view it might be well.' 'I am not disposed to deny that.' 'The exposition of the theory of the Syllogism is made clearer.' 'This in fact is taught to all who learn Logic in the common way.' 'There is no harm and some little good.' 'But to obtain any advantage from it we must,' etc., etc.? Such remarks excite one's pity, unless we regard them in the light of waggery.

Here, then, are five points,—the five main propositions in the Quantification of the Predicate, on no one of which has Mr. Mill a single word to utter in dissent from Hamilton, although he professes to give them all one neck, and to demolish them all at one blow, when he asserts (p. 436) that we do not *always* quantify the predicate in thought. But what can be more evident than it is that Mr. Mill was in jest when he wrote this? It has been seen that if we here suppose him serious, we must suppose him to limit the phrase 'Quantification of the predicate,' to determining that the predicate is true of more things than of the subject; whereas this is only one of the two quantifications, and one never made in thought except when it is expressed. In this absurd limitation of the term 'quantify,' Hamilton does not say anywhere that in common discourse we *always* quantify the predicate in thought. He says this only in the true—the general—sense of the word 'quantify.' Such a confusion as that here affected by Mr. Mill, reminds us of the attempt to describe Hamilton as saying that Logic is a science, not an art (pp. 373-378), and is as baseless a fancy (to adopt Mr. Mill's own phraseology) as ever implanted itself in the intellect of even a third or fourth-rate thinker—a mere 'superfetation' of confusion upon confusion. And will Mr. Mill's friends and followers tell us that it was a mistake?—that in that particular Mr. Mill knew no better?—that 'his reach of thought' upon this subject is really as low as that which we hold he here affects? Let them learn, even from us, his opponents,—*Fas est et ab hoste,*—to be more generous towards their Giant-killer.

But the foregoing denial of what Hamilton has said in the two Doctrines here under consideration does not, by any means, exhibit all that Mr. Mill puts on the appearance here of denying. Every passage in the remotest degree adverse to Hamilton in the Chapter, and almost every passage of those that do not relate to Hamilton at all, is of the same unreal and melodramatic character, but carry-ing, it must be admitted, a greater show of serious writing, because more unintelligibly written than much that one meets with elsewhere in the volume. I mention some of the more salient jokes and interludes.

(Page 422.)

It is not true, for instance, that Hamilton's doctrine of Comprehension discusses two kinds of Syllogism. It only discusses two interpretations of one and the same Syllogism.

(Page 423.)

It is not true that Judgments, in which both the terms are proper names, are ever judgments not in Comprehension. It is not true that it is customary, or the natural tendency of the mind, to employ our predicates as if they were predicated of more than the subjects we are speaking of, *i.e.*, to employ them as in Extension.

(Page 424.)

It is not true that the power of exciting the sensation blue is an attribute of the sky, either in technical language or in any other. It is not true that Hamilton has anywhere the technical expression 'to think a notion under a notion,' nor is it true that there is anything whatever incorrect in this 'technical' expression. Mr. Mill uses it,—often uses it. No one else that I know of.

(Page 426.)

It is not true that a Possibility of any kind is a concrete object, or is or could, by any conceivable perversion of thought, be classed under the concrete.

(Page 427.)

It is not true that anything can be at any given point of time exclusively attended to by the mind, that is not separately conceived or imaged; nor true that anything can be separately conceived or imaged, that is not exclusively attended to by the mind.

(Page 428.)

It is not true that in Logic all our indefinite judgments are thought of as in Comprehension, nor true that Hamilton denies their being so in ordinary discourse. It is not true that when the predicate extends beyond the subject we then think about Extension at all; we think then in Extension. It is not true that proper names are not as significant as common ones. It is not true that the act of thought in Extension is an act of thought differing in kind from the act of thought in Comprehension.

(Page 430.)

It is not true that placing objects in a class, and then finding them, there has ever been regarded by any one as discovering contingent truth, nor ever been acquiesced in by any one as such. It is not true that coherent thinking is a mere accident of the reasoning process. It is not true that Hamilton distinguishes two kinds of Syllogism in Comprehension and Extension. It is not true that he acknowledges anything whatever respecting these alleged two kinds of Syllogism. It is not true that Hamilton considered any alteration of premisses necessary for interpreting a Syllogism in Comprehension.

(Page 431.)

It is not true that the expression, 'two different forms of reasoning,' signifies anything else whatever but 'two different kinds of reasoning.' It is not true that Hamilton abolishes with his own hand any difference of language between Comprehension and Extension. It is not true that there ever was any for him to abolish; nor true that, except to a Giant-killer, he ever even *seemed* to contend for any. It is not true that Hamilton has anywhere said that every Syllogism was not, for an understanding mind, already quantified both in Comprehension and in Extension, *i.e.*, already in both quantities. It is not true that Hamilton has anywhere said that Comprehension was anything else but a second mode of construing the meaning of one and the same syllogism.

(*The Note.*)

Let us descend into the charming obscurities of the Note upon this page. We find it in perfect keeping with the text. It is not true that there is anything conflicting between what Hamilton says of Comprehension and Extension as merely interpretations of the same syllogism with different Wholes, and what he says of the order in which the major and minor premiss succeed each other in either case. It is not true that the passages quoted in the text are destructive of any notion of a different order of the premisses for Extension and for Comprehension. It is not true that in any case, or at any time, the notion of majority and minority—part and whole in Logic—ever fails to maintain possession of a Logician's mind. It is not true that to remind a writer of an oversight is to accuse him. Our Giant is supposed to accuse everybody whom he does not agree with, or whom he reminds of oversights; and sometimes this dissent or reminding becomes 'a serious charge' (p. 153). It is not true that what Hamilton says about the Sorites, in this note, is a matter of opinion; nor true that Mr. Mill does not 'think' it or know it as well as Hamilton. It is not true that Mr. Mill does not himself, as well as Hamilton, consider the Fourth Figure an *unnatural* state of affairs. It is not true that the two quantities are not confounded in the Fourth Figure; nor true that it does not reason across from one of them to the other. It is not true that the Fourth Figure draws the same conclusion which might have been drawn in the first, nor can possibly draw it. Every novice, as well as Mr. Mill, beats Mr. Mill's friends hollow here. It is not true that the Fourth Figure reverses the order of the premisses. Not one atom of truth in any statement in the note. The reader who will attend carefully to this one note has, in a nutshell, the whole book, and will see at once that Mr. Mill is occupied with some hidden purpose, sportive or serious, as his friends see fit to think it, which, whatever it is, precludes all statement of things as they are, substituting for them not fiction merely, but grotesque fiction, and differing in this respect from Baron Münchausen upon this point only, that whereas the one story relates to the common objects of sense around us, which every one can understand, but which are never really combined as that story combines them, the other narrative is taken up wholly with the principles of Logic and Philosophy, which are unfortunately only known to comparatively very few, exhibiting these principles, not as they are, but in every imaginable combination of the comic, and in order to give the narrative an air of historic truth, links it all with the world-wide name of Hamilton. Much of the note proceeds upon an affected ignorance of what we mean by the minor premiss and the major premiss, or by the whole and the part in Logic,—matters with which every student in every Logic Lecture-room throughout the world is perfectly well acquainted. Jack's exploits in the notes are often the richest portions of his little Drama.

(Pages 436, 437, and Notes.)

It is not true that changes of expression are the only consequences that result from the Quantification of the Predicate. It is

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not true that a mere change of expression would not give as good a parallax in thought as change of place gives in astronomy. It is not true that we ever (in Mr. Mill's phraseology) 'think the Predicate as signifying' either the whole or any part or even one of the objects included in its Extension. It is not true that when I say all A is B, I must mean in thought or know at all, that it is either all B or some B that is here true in nature; nor that when I say all asses bray, I must know or need know whether there are other brayers besides asses; nor is it true that Hamilton said we either must or do. It is not true that a single expression now in use in Logic, nor a single mode of writing propositions is to be abolished. It is not true that anything is proposed but an extended understanding of what we use and write. It is not true that the question here is at all as to whether, on hearing or saying that asses bray, we extend the braying beyond the asses. All that Hamilton says is that we extend it to the asses,—we quantify it so far. Jack is here closely wrapped in his Coat of Darkness,—the *Ignoratio Elenchi.* It is not true that there is not an 'unknown which' in the case of asses braying, if we begin at all to think about the maximum. It is not true that we do not quantify the subject also, 'in the sense which Sir W. Hamilton's theory requires;' nor true that Sir W. Hamilton thinks that the relation of quantity in extension is ever present to the thoughts *when it is not thought of.* It is not true that when Hamilton says, All asses bray, he means, or supposes any one to mean, that all the asses in the world are braying in chorus at the same moment, nor did so baseless a fancy ever implant itself in the intellect of any other thinker on earth except Jack the Giant-killer.

(Page 438.)

It is not true that Hamilton has said, or that any one has ever said, that the proposition, All A's are B's, is spontaneously quantified in thought as, All A is some B. It is not true that Hamilton or any one else has ever said that the doctrine of a Quantified Predicate is a more correct representation and analysis of the reasoning process than the common doctrine. It is not true that its not being so is fatal to the doctrine. It is not true that anybody's theory of Logic except Mr. Mill's is the science of the laws according to which we *must not* think, or need not think, in order that our thought may be valid.

(Page 439.)

It is not true that the Syllogistic theory is not an analysis of Coherent Thought, or of the reasoning process, in all its forms. It is not true that anything can furnish a test of the validity of reasoning that is not itself valid reasoning. It is not true that any one describes the Syllogism as anything else but a form into which common discourse, if valid and coherent, may be translated, and which will detect the flaws of such common discourse as is not valid and coherent. It is not true that any one has ever proposed either the Syllogism or the expressed quantification of the Predicate for any other than occasional use and purposes of illustration. It is not true that there is anything called the doctrine of 'Suppositio' in Logic. It is not true that Hamilton proposes to quantify any propositions that are not asserted or used. It is not true that the proposition, All A is all B, is not equivalent to a proposition capable of being asserted in an unquantified form. It is not true that it is not equivalent, for instance, to All equilateral triangles are equiangular triangles; nor is it true that this proposition is not asserted in an unquantified form.

(Page 440, and Note.)

It is not true that it is impossible to make a single judgment out of several. It is not true that most propositions in common discourse are not compound; nor true that a proposition's being compound unfits it for its place in the Syllogism. The note in this page is merely to shake the old bugbear of 'Conceptualism' in our face (Part I., pp. 17, 31), and to rehearse some of the bygone frolics of the Chapter upon Reasoning.

(Page 441.)

It is not true that because one judgment is less than another, it must be half of it. It is not true that the judgment, This Ass brays, is half of, or even quarter of, the judgment, All Asses bray. It is not true that there is any one who does not always wrap up more than one assertion in one form of words, and demand that these assertions shall be considered one assertion.

(*In the Note.*)

It is not true that Hamilton says there are no controversialists who make mental reservations to quibble with. He merely says we must guard against them. It is not true that Mr. Mill's remark is more exempt from absurdity than Professor De Morgan's was from misapprehension in the controversy to which Mr. Mill alludes. It is not true that 'some' ever means 'more than some.' It is not true that Hamilton, or any one else, has ever said that the two judgments into which we can dissolve the single judgment, All A is all B, are judgments with quantified predicates; nor true that any one ever said that these two judgments are not completely distinct and independent from one another. Mr. Mill, I maintain, would never have written such nonsense as we find here if he were serious. It is not true that it is only rarely that we know that the predicate is extensive enough for the subject, nor rarely that we know of its extending beyond it; nor true that we ever in any case omit to quantify it at the moment of understanding it; nor true that we only quantify it when the language does so. It is not true that Scheibler, of whose works Mr. Mill knows nothing except what he has from Hamilton, or Hamilton's Editors, differs at all upon this point from Hamilton. It is not true that Hamilton has ever denied—or ever ceased to assert—that Extension and Comprehension have here absolutely no meaning except what as correlatives they derive from one another; nor true that the quantified predicate is not quite as often in Comprehension as in Extension. In all this Mr. Mill can hardly be regarded as responsible for the stultification of his followers.

(Page 442.)

It is not true, I repeat, that 'some' ever means 'more than some,' either in colloquial or in Logical language. It is not true that, when we say 'some,' without meaning 'all,' this is any suppression whatever of what everybody knows, or, in Mr. Mill's droll phrase, 'stating implicitly in words what is explicitly in thought.'

(Page 443.)

It is not true that Hamilton sought by expressed quantification to obtain inferences which are not to be obtained without it. It is not true that Hamilton has anywhere laid claim to this. If he has, Mr. Mill's comments have sense in them; if not, not. It is not true that whatever helps to exclude error, and to simplify Logic, is not a real addition to this Branch of Knowledge. It is not true that the quantified Syllogism is not a true expression of what is in thought. It is not true that 'measuring the extent of the assertions' is not quantifying the predicate.

(Page 444.)

It is not true that no trouble is saved by our knowing precisely from the first what is meant in every proposition. It is not true that Hamilton anywhere describes the use of expressed quantification as that which Mr. Mill illustrates in this page. It is not true that any one who understands this quantification would find it either complicated or difficult or tiresome. It is not true that Hamilton denies that any one who does not understand it, as Mr. Mill here affects not to do, would find it so. Hamilton, as we have seen, says something very sharp upon this point.

(Page 445.)

It is not true that either the quantification of the Predicate generally, nor its exclusive quantification to the comprehensive Whole, diverts the mind from the true meaning of propositions, but on the contrary exhibits this with greater clearness than could have been otherwise attained. It is not true that either has the slightest Psychological irrelevance. It is not true that Comprehension concentrates thought upon classes of objects; nor true that either it or the expression of quantity involves the science of Logic in the slightest verboseness or encumbrance.

Is it credible that Mr. Mill would have written page after page full of such rubbish and mis-statement as this, if it were not that he was writing it in jest? But why, it is asked, in jest? I deny that I am bound to answer that. I have nevertheless already offered some suggestions. Another here occurs to me. Mr. Mill has an utter contempt—I am unwilling to say incapacity—for Metaphysics and Logic (which, as he truly observes, are very much one and the same subject), and seeks, in the interest, as he believes, of mankind, every opportunity of disparaging them. He may therefore have written all this, if with no other object in view, merely to show us how much nonsense might be written upon these two subjects without the world's becoming conscious of it, although he can only truly say this of his own disciples; for the opposite party are by anticipation conscious that what he writes upon these subjects is not to be depended on; and this 'low reach of thought' assumed in those who generally think with him, is one of the most glaring peculiarities of his book, as well as one of the most suggestive problems with which it presents us. His more difficult task, however, was to back skilfully out of all this nonsense,—so to back out of it that his disciples should not observe the retreat, and yet so that no reader, moderately acquainted with the subjects, should not be able to recognise it, even while the recognition involves upon the reader's part the passing out of one amazement into another,—out of the question, how Mr. Mill could misconceive so much, into the question, why Mr. Mill supposes his disciples can be led to do so.

But whatever explanation of the joke we adopt, I have now to bring Mr. Mill's own wrapped-up words out of their holes and corners in the Chapter into the open day-light, and to unwrap them and to show that Mr. Mill himself admits it was all fun, and admits that he not merely agrees with Hamilton thoroughly upon both the doctrines here in question as being both perfectly true, but that he agrees with him also in holding that both doctrines are of considerable use in that most important province of all Logic, viz., securing the coherence and consistency of the conclusion with the premisses,—a point of such supreme importance in the cause of Truth, that every doctrine which contributes to it becomes a valuable addition to the Science.

MR. MILL'S RECANTATION.

With regard to the syllogism being interpreted in Comprehension as well as in Extension, Mr. Mill,—amidst even more than the usual amount of oscillation, makes the three following admissions:—

1. He admits that there is no other assignable objection to the introduction of this doctrine as an aid in Logic,—no other counterpoise to its advantages,—than what he calls a Psychological irrelevance, and the fact that some learners experience a good deal of difficulty at first from this use of the two Wholes in the same syllogism, and that even some who no longer consider themselves learners find a difficulty still in this mode of interpreting the syllogism in two ways at the same moment, although either way alone would have presented no difficulty at all, being one of them the ordinary practice in Logic, and the other the ordinary practice in common discourse. After acknowledging the '*utility* of the 'new forms' (the two new doctrines), he speaks of 'the great addi- 'tional complication (?) which they introduce into the syllogistic 'theory; a complication which would make it at the same time 'difficult to learn or remember (?), and intolerably tiresome (?)

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'both in the learning and in the using' (p. 444). And again, 'The new forms have thus *no practical advantage which* can countervail the objection of their entire Psychological irrelevancy' (p. 445). No other objection of any kind is mentioned in the chapter,—and many will think that even these two objections are not intended to apply to this first Doctrine.

2. He admits that nevertheless the judgment in Comprehension, whose introduction into Logic is here contended for, is not only perfectly true, but more easy, natural, and common than that in Extension, being the one ordinarily used in common discourse, and involving no change in the order or terms of the syllogism. '*All* our ordinary judgments are in Comprehension only, Extension not being thought of' (p. 428). 'There is thus in *all* propositions a judgment, called by Sir W. Hamilton a judgment in Comprehension, which we make, *as a matter of course*, and a possible judgment in Extension which we may make' (pp. 428, 429), and in Logic generally do make. 'Though the meaning of *all* propositions is in Comprehension, writers on Logic always explain the rules of the Syllogism in reference to Extension alone' (p. 429). 'It was not necessary that the forms in which reasoning was directed to be written should be those in which *it is carried on in thought*' (*ibid.*). 'The slight distinction of form which he' (Hamilton) 'seemed' (to Mr. Mill) 'at first to contend for, does not exist. A syllogism in Comprehension and the corresponding syllogism in Extension are, *word for word*, the same' (p. 431). 'Who can doubt which of the two is the *original and natural* judgment, and which is a derivative and artificial mode of restating it?' (p. 432.) 'To make a distinction between reasoning in Extension and in Comprehension, when the same syllogism serves for both, could only be admissible if we employed' (or rather, is only of course practicable when we employ) '*the same words*, having sometimes in our mind the meaning in Extension; sometimes that in Comprehension; but in reality all reasoning is thought *solely* in Comprehension, *except* when we, for a technical purpose (Logic), perform a second act of thought upon the Extension,—which in general we do not, and have no need to, consider' (*ibid.*).

3. He admits that the introduction of this doctrine is of use in Logic, its having been omitted hitherto by Logicians having been attended with considerable disadvantage to the interests of Truth. After saying that Logicians had hitherto exclusively employed the

judgment in Extension, he adds, 'Their mode of proceeding has been 'attended with some *practical mischief*. . . . It has also been one 'of the causes of the prejudice so general in the last three centuries 'against the syllogistic theory' (p. 430). The judgment in Extension alone 'can never, I think, have really satisfied any competent 'thinker, however he may have acquiesced in it *for want of a* '*better*' (*ibid.*). The practical advantage, *to some extent*, of the doctrine is further admitted in the words already just quoted above:— 'The new forms have *no* practical advantage *which* can counter-'vail,' etc.

On the subject of expressing in Logic the Quantification of the Predicate, Mr. Mill, with the same tumbling to and fro, or rather more of it, makes also three admissions:—

1. He admits that the doctrine is founded upon truth and nature, and yields neither more nor less than the very same inferences as the doctrine of the unquantified predicate does, Mr. Mill having objected to it merely, he tells us, from a mistaken notion that Hamilton claimed for it more extended inferences than could have been obtained by the old Logic. 'Having the two concepts 'Man and Rational . . . we *must* perceive and judge whether' (in the proposition as understood by us and as stated by us) 'the one 'is merely a part of the other or a whole coinciding with it' (p. 440, Note). 'I have myself said that if we have two concepts' (the subject and predicate of our proposition), 'we cannot but perceive 'any relation of whole and part which' (in our own mind, and as we understand them) 'exists between them' (*ibid.*). 'There is not 'a *single* instance in which a conclusion that is provable from 'quantified premisses could not be proved from the same pre-'misses unquantified,' to which Mr. Mill jocularly adds, If we quantify them,—'if we set forth all those which are really in-'volved' (p. 443). He then says, apparently of both Doctrines, 'They should, in short, be taken into account by Logic as *authentic* '*forms* . . . of . . . use in practice,' adding, however, that they are *not of much use* (p. 445).

2. He admits that this Quantification of the Predicate is not anything very puzzling or complicated or strange, having been always familiar and common enough in some form or another to the Logical student; yet that a supposed complication of some description, and a Psychological irrelevance, whatever that means, are the only two objections which occur to Mr. Mill against this valuable addition to our *a priori* Logic. 'This' (Quantification of the Predicate)

'in fact is taught to *all* who learn Logic, in the *common* way, by 'the theory of Conversion, and the syllogistic rules against Undis-'tributed Middle' (p. 439). 'The utility of the new forms' being fully admitted, he proceeds thus:—'The *utility* of the new forms is 'by no means such as to compensate for the great additional com-'plication (?) which they introduce into the syllogistic theory' (p. 444), and after explaining, as I shall next quote, the valuable practical advantage of quantifying the Predicate, he says, 'The 'new forms have no *practical advantage which* can countervail the 'objection of their entire Psychological irrelevancy' (p. 445). What he means by Psychological irrelevance he nowhere tells us.

3. He admits that the doctrine, nevertheless, is not only perfectly true and familiar enough in practice to the student, but exempt from all real objection, useful (this Mr. Mill admits everywhere, even where he most *limits* its use), enabling the Syllogism to be a more successful test of truth, making the theory of Logic clearer, and the practice easier, to both the learner and the learned,—in short, like the preceding doctrine, a *decided* improvement, an authentic form, essential to Logic—and even, as Mr. Mill himself views it, a great practical advantage not to be rejected,—a valuable addition,—to the syllogistic theory. To the quotations already here given to this effect, I add the following:—'*There is no harm* in giving to these doctrines the more 'explicit expression demanded for them by Sir W. Hamilton' (p. 439). 'They should be taken into account by Logic as *authentic forms,* but of little *use* in practice' (p. 445). '*The utility of the* '*new forms* is by no means such,' etc. (p. 444.) 'The new forms 'have no *practical advantage which*,' etc. (p. 445.) 'There is *some* '*good* in giving to these *essential* doctrines the more explicit ex-'pression demanded for them by Sir W. Hamilton' (p. 439). 'It' (the Quantification of the Predicate) 'may in some cases *enable us* '*more readily to see whether the conclusion really follows from the* '*premisses. Without rejecting it* as an available *help* for this pur-'pose, I must observe that its *use* in this capacity appears to me '. . . limited' (p. 443). 'It might well be that a form which '*always* exhibited the quantity of the predicate might be *an im-*'*provement* on the common form; and I am not disposed to deny 'that for *occasional* use, and for purposes of illustration, *it is so.* 'The exposition of the theory of the Syllogism is made *clearer* by it' (p. 439). 'According to the very different view I myself take of 'Formal Logic, this doctrine might *still be a valuable addition to*

'*it*' (p. 438). 'It does not follow that writing the predicate with a quantification may not be *a real help to the art of Logic*' (p. 443), etc. etc. etc.

I now conclude Part II. with the same result as Part I. Hamilton not only remains in every particular untouched, but re-appears out of each of Mr. Mill's chapters as out of a cloud, more brilliant to the eye than he disappeared beneath it. It has been shown against this strange Critic, in the *first* Section of the present Part, that our Definition of Logic is unassailable at every point,—that Logic is the Branch of Knowledge which teaches the *a priori* Principles of Coherent or Consistent Thinking, or, as Hamilton expresses precisely the same import, The science of the Laws of Thought as Thought. In the *second* Section it has been shown, against Mr. Mill, that the Laws of Thought, instead of being Canons or Precepts, are Fundamental to it, are Laws of all Being as well as of Coherent Thought, are of supreme importance in Logic, excluding everything from the name of Logic that does not teach us how to conform to them when we think, and are *a priori* or Necessary. Finally, in the *third* Section of this Part, it has been shown against Mr. Mill not only that the Judgment in Comprehension is quite as easy and natural as the Judgment in Extension, or rather more so, but also that the constant expression of the Predicate's Quantity is unattended with any difficulty, this quantification being already rendered familiar by the practice of the old Logic in Conversion, and that, beside this facility in the operations, both these Doctrines are not only perfectly sound and true in themselves, but also, to say the very least of both, valuable additions to the Syllogism. All that has been clearly seen in detail.

That, however, is not all. The more extraordinary portion remains behind. It has not merely been seen that Mr. Mill is entirely at fault in his attack upon each of the propositions now indicated. It has further been seen that he admits he is, and admits that the facts are in all cases as Hamilton describes them. Nay; it has been shown that HIS STATEMENT AGAINST HAMILTON IS NOT ONLY EVERYWHERE GROUNDLESS, BUT THAT EVERYWHERE MR. MILL HIMSELF ADMITS THAT HE WAS AWARE IT WAS SO WHEN HE MADE IT.

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